

Annotated keys to the genera of Tachinidae (Diptera) found in tropical and southern Africa

by

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ABSTRACT

A set of keys provides a means of identification for the 188 genera of Tachinidae that have up to now (1983) been recognised in the fauna of tropical and southern Africa, i.e. within the Afrotropical zoogeographical region excluding the islands of the Indian Ocean. The genera are arranged by tribe, or by group of small tribes, and a master key to tribes provides the entrée to the individual keys in which the genera appear. Annotations are given at each generic exit that indicate the number of species known in the genus from the area covered, and that cite pertinent references for species-level identification; when appropriate, the existence of known but undescribed species or of much-needed generic revision is noted. An annotated glossary of key characters and terms precedes the keys, together with a systematically arranged check-list of the genera to orientate the user into the classification adopted. The host-relations of the Tachinidae concerned in the work are briefly reviewed for their relevance to identification, and a synoptic list of known hosts for each tachinid genus is included in the review.

Study of types and other material for key preparation showed the need for a few nomenclatural changes. These include the establishment of five new synonyms in generic names, two new synonyms in specific names, eight new combinations, the resurrection of three hitherto synonymous names to use for valid genera, and the description of two new species (one for a new genus and the other for a genus not previously recognised in the area covered): all such changes are detailed in comments to the check-list of genera. Four genera are recognised as present in the tachinid fauna of southern Africa that are additional to those listed in a recent catalogue (Crosskey 1980) and are included in the keys: they are *Apomorphomyia* Crosskey gen. n., *Plagiomima* Brauer & Bergenstamm, *Schembria* Rondani and *Stomina* Robineau-Desvoidy.

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INTRODUCTION

Africa has a rich and varied tachinid fauna, a fact well evidenced by the listing of nearly 1 000 already-described species and some 200 genera in the recently published *Catalogue of the Diptera of the Afrotropical Region* (Crosskey 1980). Almost any general collection of Diptera from tropical or southern Africa is likely to contain specimens of Tachinidae that sooner or later — unless the material is to remain for ever unworked and valueless — will need to be identified. Tachinidae are all parasites of other arthropods, virtually always of other insects, and there is often therefore a special and immediate need for the identification of those that are obtained as reared specimens from economically important hosts, for instance from lepidopterous stem-borers and army-worms, from destructive timber-beetles, or from cotton-strainer bugs.

Students of African Diptera have been deterred from the Tachinidae, despite the large size of the family and its fascinating character, because of the problem of

knowing where to begin on the task of identifying what seems, initially at least, to be an endless variety of baffling forms. Even the specialist is not immune from the occasional feeling of desperation, because the shortage of comprehensive works and the natural difficulties of a group in which the phyletic relationships are rarely well expressed in the hard-parts morphology of the adult fly are sources of much difficulty (practical identification is virtually always dependent upon taxonomic criteria that lie with the adult life stage). The specialist at least has the advantage that a named reference collection is normally available to him, whereas the beginner is faced with the fact that even if he puts a name on a specimen he usually cannot confirm immediately whether he is right or wrong; only the specialist can do this until the beginner has built up an authentically named collection. In this transitional phase it is important for the would-be student of Tachinidae not to be discouraged by faulty identifications and abandon the attempt to acquire some expertise in this family. New specialists are much needed to deal with the rich Afrotropical fauna and replace the very few current specialists who have knowledge for this area.

Background to the present work. Before the Second World War, omitting some random early descriptions of genera or species by Bezzi and a few other workers, the taxonomy of Afrotropical Tachinidae was almost entirely in the hands of J. Villeneuve working in France and C. H. Curran working in the United States. The first was pre-eminently a specialist in the higher flies (particularly calyptrates) and the second a general dipterist. Each described a large number of species, but neither provided any collation of the taxa described either by themselves or by others; they worked independently, but their joint legacy to succeeding dipterists was a multitude of generic and specific names that were for the most part totally uninterpretable without reference to the types. Curran's contribution to African tachinidology, for all its profligacy with described nominal species, was specially marred by its total lack of figure-work and the exceptionally generous limits that he set to tachinid genera. Almost all the species attributable to him that belong to the subfamily Goniinae he assigned to 'catch-all' concepts of the Robineau-Desvoidy genera *Phorocera*, *Sturmia* and *Zenillia* — which even allowing for the less-fashioned taxonomy of the time was singularly unhelpful (by today's concepts neither *Phorocera* nor *Zenillia* is present in the Afrotropical region).

This taxonomic maelstrom persisted until the early 1940s, by when the late Dr Fritz van Emden had become the dipterist with the Imperial (now Commonwealth) Institute of Entomology. For some 30 years the IIE had been the organisation through which field entomologists in Africa could obtain identifications for the Tachinidae involved in their work; in practice, the IIE sent the specimens to Villeneuve, and up to 1939 all names for African tachinids emanating from the Institute were from his determinations. The war put a stop to this source of identification, and obliged van Emden (appointed to the Institute in 1937) to take up the study of 'Ethiopian' Tachinidae himself.

Seeing the disarray in which the taxonomy of the family for the Ethiopian (now Afrotropical) region stood, van Emden began the daunting job of co-ordinating existing knowledge for the region and describing new species when this appeared to him warranted. This laborious undertaking resulted in three major papers

(Emden 1945, 1947, 1960) under the general title of '*Keys to the Ethiopian Tachinidae*', the first dealing with Phasiinae, the second with Dexiinae, and the last with Tachininae (called Macquartiinae by van Emden). These papers collectively are the first major achievement on Afrotropical tachinids, and remain the basic text for species-level identification in the subfamilies they cover. The keys are not always easy to use, partly because of the natural difficulties of the insects themselves, but also because of van Emden's desire — shown by his keys to other groups also — to make the keys reflect his ideas of phylogenetic relationship. To reflect these, he used the system of key construction that splits the dichotomous couplet alternatives widely apart instead of that (preferred by most present-day taxonomists) in which the alternatives are contiguous; this makes the keys less easy in practice than they might have been. The last of van Emden's trio of papers, the 175-page work issued in 1960, is almost completely unillustrated, but future workers should appreciate the probable reason for this: van Emden died prematurely in 1958 with the typescript virtually complete, and the 1960 paper was published posthumously after being seen through the press by Dr R. G. Fennah (then Assistant Director of the Commonwealth Institute of Entomology).

It had been van Emden's intention to complete the coverage of the Afrotropical fauna with an enormous final volume dealing with the Goniinae, the vast subfamily still outstanding. This was an ambitious project, much more difficult to accomplish, and probably would never have been completed (at least in the style of the early parts). In tackling Goniinae, van Emden would have been faced with formidable quantities of material, a vast number of nominal taxa which could only have been dealt with by study of types (not easily obtainable) and after long and critical study of male genitalia, and an as yet inchoate generic system. On the last point, however, he would have been able to benefit greatly from the new approach to genera in the goniine part of the Tachinidae that was being generated by the painstaking work of Dr L. P. Mesnil and issued gradually in Lindner's *Die Fliegen der Palaearktischen Region*. The first 879 pages of this work, published between 1944 and 1965 (see Bibliography), deal with the genera of the subfamily Goniinae for the Palaearctic region but embody much information relevant to the Afrotropical area also.

Despite the problem confronting him, van Emden had assembled, just before his death, all the unidentified material of Goniinae in the collection of the British Museum (Natural History) (BMNH). This material, together with goniines already identified in the general collection of the Museum, was to form the basis of his proposed study. All this material became available to me in 1959 when I succeeded van Emden as the dipterist for the Commonwealth Institute of Entomology, but having then no knowledge of Tachinidae it posed the question of what to do with it. To try and complete the project that van Emden had in mind was impracticable, and instead it seemed better to work the material gradually as my knowledge of the group improved. By the time the keys for the present work were being prepared (1983) all the material had been identified, at least to generic level, and incorporated in the BMNH named collection; much of it has also been identified to named or unnamed species level, but to obtain

reliable species identifications in Goniinae is specially difficult because of the need for complete, or at least for regional, generic revisions to be undertaken before accurate specific names can be attached to specimens.

The last point is strongly stressed, and must be appreciated by any student of Goniinae. To emphasise it, I reproduce here the comments made earlier (Crosskey 1980:823) in the introduction to the Tachinidae part of the Afrotropical Diptera Catalogue: 'Revisionary studies are urgently needed on Afrotropical Goniinae to resolve the formidable problems of identification (and of past misidentification) that exist in virtually every genus. Most so-called species of Afrotropical goniines are actually complexes of very closely allied species (usually undescribed), and the identifications existing in the literature [ie. to species, not necessarily to genera] are largely meaningless.'

Clearly it is going to require a laborious and time-consuming effort to revise every goniine genus to the level where species identifications can be reliably made (ie. after critical study of specimens (including all types of described species), illustrations of genitalia or other characters, preparation of keys, etc.). But a prerequisite to make such individual generic revisions possible at all is to have available a framework classification and system of keys by which the *genera* themselves can be recognised in the first place.

The aim of the work here presented is to satisfy this first priority by offering a means of identifying specimens to the generic level. Modifications to the keys will certainly be needed in order to adapt them to cope with genera as yet undescribed, and probably to iron out practical deficiencies in their construction if and when these surface, but they should at least provide some starting point for the dipterist interested in embarking on the Tachinidae of tropical and southern Africa or already involved in routine identification of tachinids as parasites. To maximise the usefulness of the keys the whole family has been dealt with, not only the Goniinae left undone by van Emden: in fact, so manifold are the taxonomic and nomenclatural changes in Tachinidae since the 1950s that van Emden's papers are to some extent superseded at the supraspecific level, and a set of generic keys for the whole family drawn up to a consistent style is therefore desirable. The arrangement of the classification and the nomenclature of genera adopted (excepting a few small changes detailed elsewhere in this work) are the same as in my recently published catalogue of Afrotropical Tachinidae (Crosskey 1980): for brevity or other convenience this catalogue is sometimes referred to in the text as 'the 1980 Catalogue'.

Geographical coverage. The keys do *not* cover the whole of the Afrotropical zoogeographical region, as did the 1980 Catalogue, the Malagasy subregion having been excluded. Exclusion of Madagascar and related islands was dictated by the severe lack of material from this area in the BMNH collection and the fact that it would have been disproportionately time-consuming to have assembled material of the described Malagasian genera from other museums. In practice there is no immediate demand for the identification of tachinids from Malagasia. These factors together suggested the restriction of the keys to the African mainland area of the Afrotropical region, ie. to the area here collectively called 'tropical and southern Africa'.

For many tribes, however, there are no genera known in Malagasias that do not also occur in mainland Africa, and for such tribes the keys do in fact automatically cover all the genera known for the whole Afrotropical region. For some tribes there are endemic Malagasian genera, and therefore the keys to the genera of these tribes are not fully complete for all of the Afrotropical region (which in my interpretation embraces Malagasias as a subregion instead of excluding it — as some zoologists prefer — as an independent region). In titling the keys a deliberate distinction has therefore been drawn between those that cover 'the Afrotropical region' and those that cover only 'tropical and southern Africa' (a distinction obvious from scanning the list of keys in the Contents list).

Material studied. The work is based almost entirely upon a study of material in the British Museum (Natural History) (BMNH), which contains by far the largest and most representative collection of identified Afrotropical Tachinidae. Only a handful of genera known for tropical and southern Africa (16 from the total of 188) have at present no representative specimen in the BMNH collection. To place these in the keys the necessary types or other specimens were borrowed from other collections (shown in the 'Acknowledgements' to those who mediated their loan to me).

Illustrations. These have all been drawn personally, and a few points should be noted concerning them. Most taxonomic works on Tachinidae until recently have been seriously lacking in figure-work. Many hundreds of species and genera have been described without their authors taking the trouble to provide even a single drawing to help others to recognise their taxa. Lack of illustration has retarded progress on the group at the research level and frequently rendered identification impossible until actual type-specimens could be examined. Adult Tachinidae have many characters that can helpfully be illustrated (eg. head structure, chaetotaxy, abdominal shape, wing venation), and ideally the present work could be more profusely illustrated than it is. The 150 figures given here are considered to be a reasonable compromise between under-illustration and the excessive personal research time that it would have taken to complete the work if every genus had each notable key character illustrated.

The selection of genera to be illustrated by at least one figure has been weighted towards the little-known or almost totally unknown genera that have never before been illustrated, or for which there is scarcely any reference material in identified collections. In some instances the genus is still known only from the type of its type-species. Where it seems helpful, figures have been given of some characters mentioned in the square-bracketed 'bonus' morphological information provided at a generic exit (for explanation see 'aims and format of the keys'); that is to say, they are not strictly confined to the key characters chosen for the primary parts of the couplets.

Head shape provides specially important characters in many parts of the family, but is difficult to describe in words. It has been illustrated for 58 genera, mainly in profile. The chaetotaxy in these head figures has been omitted (as also eye-hairing in the few illustrated genera that possess it) as it is the outline *shape* for which the figures are provided.

The keys are all based on externally visible hard-parts morphology as concealed genital characters at this stage of taxonomy have little part to play in *generic* identification and characterisation. There are therefore no figures of the structures of male genitalia or female terminalia that are normally concealed *in situ*.

Finally it should be noted that the drawings are to arbitrary convenient sizes; in no instance do they indicate any relative difference in size between illustrated taxa.

CHECK-LIST OF THE GENERA OF TACHINIDAE IN TROPICAL AND SOUTHERN AFRICA

The genera of Tachinidae known from the mainland African area of the Afrotropical zoogeographical region (ie. from tropical and southern Africa) are indicated alphabetically in the following list within their appropriate tribal assignments. The arrangement of tribes and subfamilies accords with that published in the catalogue of Afrotropical Tachinidae (Crosskey 1980). The valid names of the genera (and also of the few recognised subgenera) are in bold type, and generic synonyms indented in italic type; synonyms are only included if they are based on Afrotropical type-species and therefore relate directly to regional literature. The roman numbering of the key that treats each genus within its tribe is shown parenthetically after the tribal name. A superscript number after a generic name indicates a comment made *at the end* of the check-list concerning a taxonomic or nomenclatural change since the 1980 Catalogue.

Subfamily Phasiinae

Tribe Phasiini (key I)

Alophora Robineau-Desvoidy, 1830

Subgenus **Alophorella** Townsend, 1912

Subgenus **Mormonomyia** Brauer & Bergenstamm, 1891

Bogosia Rondani, 1873

Epineura Brauer & Bergenstamm, 1891

Engelobogusia Townsend, 1933

Bogosiella Villeneuve, 1923

Gymnosoma Meigen, 1803

Tribe Catharosiini (key III, part)

Catharosia Rondani, 1868¹

Archiphania Emden, 1945 *syn. n.*¹

Litophasia Girschner, 1887

Tribe Cylindromyiini (key II)

Besseria Robineau-Desvoidy, 1830

Catapariprosopa Townsend, 1927

Hemiphania Villeneuve, 1937

Phaniola Mesnil, 1978

Cylindromyia Meigen, 1803

Conopisoma Speiser, 1910

Formicocyptera Townsend, 1933

[*Ocyptera*: authors, not Latreille]

Hermya Robineau-Desvoidy, 1830

Paraphania Brauer &

Bergenstamm, 1889

Liancosmia Speiser, 1910

Deuteroclara Villeneuve, 1915

Paraclara Bezzi, 1908²

Clara Brauer & Bergenstamm, 1889 (preoccupied)

Prolophosia Townsend, 1933

Tribe Cinochirini (key III, part)

Apomorphomyia Crosskey *gen. n.*³

Cahenia Verbeke, 1960⁴

Mapolomyia Verbeke, 1960
*syn. n.*⁴

Tribe Leucostomatini (key IV)

Clairvillia Robineau-Desvoidy, 1830⁵

Clairvilliops Mesnil, 1959 *syn. n.*⁵

Leucostoma Meigen, 1803

Tribe Eutherini

Euthera Loew, 1866*Preuthera* Townsend, 1933

Subfamily Dufouriinae

Tribe Dufouriini (key V, part)

Chetoptilia Rondani, 1862**Mesnilana** Emden, 1945**Pandelleia** Villeneuve, 1907*Afrophasia* Curran, 1939**Plesina** Meigen, 1838*Xanthopetia* Townsend, 1933**Rossimylops** Mesnil, 1953

Tribe Imitomyiini (key V, part)

Imitomyia Townsend, 1912*Diplopota* Bezzi, 1918

Subfamily Dexiinae

Tribe Dexiini (key VI)

Billaea Robineau-Desvoidy, 1830*Gigamyia* Macquart, 1843*Amphiboliopsis* Townsend, 1926*Chaetobillaea* Mesnil, 1976**Dexia** Meigen, 1826**Dexiomeria** Curran, 1933**Dinera** Robineau-Desvoidy, 1830*Africodexia* Townsend, 1933**Dolichodexia** Brauer &
Bergensstamm, 1889**Piligena** Emden, 1947**Platydexia** Emden, 1954**Pretoriamyia** Curran, 1927**Prosenia** Le Peletier & Serville, 1828**Prosenoides** Brauer & Bergensstamm,
1891*Periprosena* Villeneuve, 1938**Pseudodinera** Brauer &
Bergensstamm, 1891

Subfamily Tachininae

Tribe Rondanioestrini (key VII,
part)**Rondanioestrus** Villeneuve, 1916

Tribe Palpostomatini (key VII, part)

Eutrixopsis Townsend, 1919*Paratamiclea* Villeneuve, 1936*Eutrixina* Curran, 1938**Palpostoma** Robineau-Desvoidy,
1830*Afromeigenia* Curran, 1927*Hamaxiomima* Verbeke, 1962**Peristasisea** Villeneuve, 1934*Hamaxioides* Mesnil, 1959

Tribe Ormiini (key VIII)

Aulacephala Macquart, 1851*Aulacocephalopsis* Townsend,
1919**Therobia** Brauer, 1862*Xystomima* Villeneuve, 1914*Plesiooestrus* Villeneuve, 1914*Proxystomima* Villeneuve, 1925

Tribe Glaurocarini (key IX)

Glaurocara Thomson, 1869*Oestrocharis* Villeneuve, 1927*Dysoestrus* Villeneuve, 1937

Tribe Campylochetini (key X, part)

Elpe Robineau-Desvoidy, 1863*Myxactia* Villeneuve, 1915

Tribe Voriini (key X, part)

Cyrtophleba Rondani, 1856**Hyleorus** Aldrich, 1926*Afroplagia* Curran, 1938**Hystricoveria** Townsend, 1928*Afrovorio* Curran, 1938*Anavoria* Mesnil, 1953**Plagiomima** Brauer & Bergensstamm,
1891⁶**Reichardia** Karsch, 1886**Voria** Robineau-Desvoidy, 1830

Tribe Wagneriini (key X, part)

Periscepsia Gistel, 1848*Scopolia* Robineau-Desvoidy, 1830
(preoccupied)*Phoricheta* Rondani, 1861[*Wagneria*: authors, not Robineau-
Desvoidy]

Tribe Thelairini (key XI)

Allothelaira Villeneuve, 1915**Thelaira** Robineau-Desvoidy, 1830

Tribe Microphthalmini (key XII)

Amesiomima Mesnil, 1950**Cyrtocladia** Emden, 1947**Microphthalma** Macquart, 1843*Prodexilla* Townsend, 1933*Amesioeclea* Villeneuve, 1936

Tribe Eloceriini (key XIII, part)

Trichactia Stein, 1924

Tribe Macquartiini (key XIII, part)

Chyluluella Emden, 1960⁷**Macquartia** Robineau-Desvoidy, 1830**Porphyrismus** Emden, 1960

Tribe Loewiini (key XIII, part)

Trioxoclea Villeneuve, 1916

Tribe Minthoini (key XIV)

Kinangopana Emden, 1960**Mintho** Robineau-Desvoidy, 1830**Minthodes** Brauer & Bergenstamm, 1889**Pseudominthodes** Townsend, 1933**Sarrorhina** Villeneuve, 1936⁸**Sumpigaster** Macquart, 1855*Megistodexia* Townsend, 1933*Syneplaca* Villeneuve, 1938*Dyshypostena* Villeneuve, 1939*Synhypostena* Villeneuve, 1939**Tipulidomima** Townsend, 1933

Tribe Nemoraeini (key XV)

Nemoraea Robineau-Desvoidy, 1830*Chaetolydella* Villeneuve, 1916

Tribe Leskiini (key XVI)

Cololeskia Villeneuve, 1939**Istoglossa** Rondani, 1856*Peristoglossa* Mesnil, 1973**Leskia** Robineau-Desvoidy, 1830**Ocypteromima** Townsend, 1916*Pyrrhosiella* Villeneuve, 1916*Asboleola* Villeneuve, 1916**Oxymedoria** Villeneuve, 1916**Stomina** Robineau-Desvoidy, 1830⁹**Subfischeria** Villeneuve, 1937

Tribe Ernestiini (key XVII)

Brachelia Robineau-Desvoidy, 1830*Pseudoloewia* Brauer &

Bergenstamm, 1889

Bracheliopsis Emden, 1960

Tribe Linnaemyini (key XVIII)

Gymnoglossa Mik, 1898**Linnaemya** Robineau-Desvoidy, 1830*Tachinomima* Brauer &

Bergenstamm, 1891

Hecatoepalpus Townsend, 1933*Micropalpinus* Enderlein, 1937*Gymmantia* Enderlein, 1937**Marshallomyia** Emden, 1960**Plagiocoma** Villeneuve, 1916**Schizolinnaea** Emden, 1960

Tribe Tachinini (key XIX)

Chromatophania Brauer &

Bergenstamm, 1889

Cuphocera Macquart, 1845**Dejeania** Robineau-Desvoidy, 1830*Melanojeania* Townsend, 1933**Paratachina** Brauer & Bergenstamm, 1891**Peleteria** Robineau-Desvoidy, 1830*Pleropeleteria* Villeneuve, 1916*Peletieriana* Mesnil, 1970**Platyschineria** Villeneuve, 1942¹⁰

Subfamily Goniinae

Tribe Acemyini (key XX)

Ceracia Rondani, 1865**Charitella** Mesnil, 1957**Metacemyia** Herting, 1969

Tribe Neaerini (key XXI)

Elfia Robineau-Desvoidy, 1850**Neoplectops** Malloch, 1930**Phytomyptera** Rondani, 1845

Tribe Siphonini (key XXII)

- Actia** Robineau-Desvoidy, 1830
Ceranthia Robineau-Desvoidy, 1830
Ceromya Robineau-Desvoidy, 1830
Peribaea Robineau-Desvoidy, 1863
Siphona Meigen, 1803

Tribe Blondeliini (key XXIII)

- Afrolixa** Curran, 1939
Blondelia Robineau-Desvoidy, 1830
Compsilura Bouché, 1834
Eomedina Mesnil, 1960
Eophyllophila Townsend, 1926
Kiniatiliops Mesnil, 1955
Kiniatilla Villeneuve, 1938
Latiginella Villeneuve, 1936
Lindnerioli Mesnil, 1959
Medina Robineau-Desvoidy, 1830
Pararondania Villeneuve, 1916
Pelashyria Villeneuve, 1935
Prodegeeria Brauer & Bergenstamm, 1894
Myxhypostena Villeneuve, 1939
Prosopofrontina Townsend, 1926
Prosuccingulum Mesnil, 1959
Rioteria Herting, 1973
Trigonospila Pokorný, 1886

Tribe Exoristini (key XXIV)

- Bessa** Robineau-Desvoidy, 1863
Chaetexorista Brauer & Bergenstamm, 1894
Isoprosopaea Villeneuve, 1938
Parapodomyia Mesnil, 1956
Chaetoria Becker, 1908
Clistorrhina Bezzi, 1926
Chetogena Rondani, 1856
Exorista Meigen, 1803
Podotachina Brauer & Bergenstamm, 1891
Phorinia Robineau-Desvoidy, 1830
Bessioli Mesnil, 1960
Stomatomyia Brauer & Bergenstamm, 1889

Tribe Ethillini (key XXV)

- Ethilla** Robineau-Desvoidy, 1863

Ethylloides Verbeke, 1970

- Gynandromyia** Bezzi, 1923
Trypherosoma Verbeke, 1962
 syn. n.¹¹
Zelindomyia Verbeke, 1962
 syn. n.¹¹

Mycteromyiella Mesnil, 1949

- Nemorilloides** Brauer & Bergenstamm, 1891
Paratryphera Brauer & Bergenstamm, 1891
Phorocerosoma Townsend, 1927
Zelindopsis Villeneuve, 1943

Tribe Winthemiini (key XXVI)

- Hemiwinthemia** Villeneuve, 1938¹²
Nemorilla Rondani, 1856
Ossidingia Townsend, 1919¹³
Jesuimyia Townsend, 1926
Timavia Robineau-Desvoidy, 1863
Winthemia Robineau-Desvoidy, 1830
Sericophoromyia Austen, 1909
Sericophoromyiops Townsend, 1933
Winthemiola Mesnil, 1949

Tribe Carceliini (key XXVII, part)

- Carcelia** Robineau-Desvoidy, 1830
 Subgenus **Carcelia** s. str.
 Subgenus **Caricelia** Mesnil, 1975
Carcelita Mesnil, 1975
 Subgenus **Euryclea** Robineau-Desvoidy, 1863
 Subgenus **Senometopia** Macquart, 1834
 Subgenus **Thelymyiops** Mesnil, 1950
Hypersara Villeneuve, 1935
Intrapales Villeneuve, 1938
Leuccarcelia Villeneuve, 1921
Lubutana Villeneuve, 1938
Theocarcelia Townsend, 1933
Thelyconychia Brauer & Bergenstamm, 1889
Torinamyia Mesnil, 1959

Tribe Anacamptomyiini (key XXVII, part)

Anacamptomyia Bischof, 1904
Roubaudia Villeneuve, 1910
Pararoubaudia Roubaud & Villeneuve, 1914

Tribe Sturmiini (key XXVIII)

Afrosturmia Curran, 1927
Blepharella Macquart, 1851
Congochrysosoma Townsend, 1916
Pujolina Mesnil, 1968

Cadurcia Villeneuve, 1926
Argyrophylacoides Townsend, 1933

Calozenillia Townsend, 1927
Perlucidina Mesnil, 1952

Drino Robineau-Desvoidy, 1863

Pales Robineau-Desvoidy, 1830
Ctenophorocera Brauer & Bergenstamm, 1891

Micropales Villeneuve, 1927

Palexorista Townsend, 1921
Prosturmina Mesnil, 1970

Paradrino Mesnil, 1949

Pexopsis Brauer & Bergenstamm, 1889

Pimelimyia Mesnil, 1950

Ptilocatagonia Mesnil, 1956

Sisyropa Brauer & Bergenstamm, 1889

Stylurodoria Townsend, 1933

Ctenophoroceroopsis Baranov, 1938

Poujadea Mesnil, 1950

Eocatagonia Mesnil, 1950

Sturmia Robineau-Desvoidy, 1830

Polychnomyia Bischof, 1904

Verbekeia Mesnil, 1959

Thelairodrino Mesnil, 1954

Zygobothria Mik, 1891

Formosodoria Townsend, 1933

Tribe Goniini (key XXIX)

Gonia Meigen, 1803

Goniophthalmus Villeneuve, 1910

Pseudogonia Brauer & Bergenstamm, 1889

Tribe Eryciini (key XXX)

Antistasea Bischof, 1904

Aplomya Robineau-Desvoidy, 1830

Prozenillia Villeneuve, 1916

Aplomyiella Mesnil, 1939

Atricholyga Villeneuve, 1939

Blepharellina Mesnil, 1952

Brachychaetoides Mesnil, 1970¹⁴

Cadurciella Villeneuve, 1927

Cestonia Rondani, 1861

Cestonionerva Villeneuve, 1929

Chlorolydella Townsend, 1933

Chlorophryno Townsend, 1933

Descampsina Mesnil, 1956

Diaprochaeta Mesnil, 1970¹⁵

Dolichocolon Brauer & Bergenstamm, 1889

Erythroceras Robineau-Desvoidy, 1849

Eurysthaea Robineau-Desvoidy, 1863

Gaedioxis Villeneuve, 1937

Agaedioxis Villeneuve, 1939

Hystricephala Macquart, 1846

Kaiseriola Mesnil, 1970¹⁵

Lydellina Villeneuve, 1916

Metoposisyrops Townsend, 1916

Myxarchiclops Villeneuve, 1916

Phryxe Robineau-Desvoidy, 1830

Phytomypterina Emden, 1960

Pretoriana Curran, 1938

Myxogaedia Mesnil, 1956

Prosopodopsis Townsend, 1926¹⁶

Pseudoperichaeta Brauer &

Bergenstamm, 1889

Achaetoneurilla Mesnil, 1939

Schembria Rondani, 1861¹⁷

Sturmiopsis Townsend, 1916

Rhodesina Curran, 1939

(preoccupied)

Curranomyia Townsend, 1941

Thelairosoma Villeneuve, 1916

Seyrigomyia Mesnil, 1944

Lespesiopsis Mesnil, 1954

Thelairoxenis Mesnil, 1954

Comments

- 1 Following study for this work, *Archiphania* Emden is considered invalid and the name placed as a synonym of *Catharosia*. The 1980 Catalogue (p. 825) should be modified accordingly. The following new combination results from the synonymy: *Catharosia alutacea* (Emden, 1945) **comb. n.**
- 2 The name *Clara* in Tachinidae was found to be preoccupied after the 1980 Catalogue (p. 826) was set. Its synonym *Paraclara* replaces it as the valid name for the genus, as was noted in the Appendix to the Catalogue (p. 1230) but might be easily overlooked.
- 3 New genus with new type-species, described on p. 298. Should be entered in 1980 Catalogue (p. 828) in Cinochirini.
- 4 Following study for this work, *Mapolomyia* Verbeke is considered invalid and the name placed as a synonym of *Cahenia*. The 1980 Catalogue (p. 828) should be modified accordingly. The following new combination results from the synonymy: *Cahenia connexa* (Verbeke, 1960) **comb. n.**
- 5 Following study for this work, *Dionaea inermis* Mesnil and *Clairvillia breviforceps* Emden are considered synonymous, the former being a junior synonym of the latter (**syn. n.**). As *inermis* is type-species of *Clairvilliops*, this genus-group name becomes a junior synonym of *Clairvillia* (**syn. n.**). The 1980 Catalogue (p. 828) should be modified accordingly. No new combination results from these changes.
- 6 This genus is additional to the 1980 Catalogue and should be added to p. 838, with *P. rufolateralis* Crosskey sp. n., between *Hystricovoria* and *Reichardia*.
- 7 Following study for this work, the genus *Chyuluella* which was tribally unplaced in the 1980 Catalogue (p. 881) has been restored to Macquartiini.
- 8 The misspelling *Sarrhorina* in the 1980 Catalogue (p. 842) should be corrected to *Sarrorhina*.
- 9 This genus is additional to the 1980 Catalogue and should be added to p. 845 immediately preceding the entry for *Subfischeria*. Required information: *Stomina* Robineau-Desvoidy, 1830:411. Type-species: *Stomina rubricornis* Robineau-Desvoidy, 1830 [= *Musca tachinoides* Fallén, 1816], by monotypy. One identified Afrotropical species, South Africa. See key XVI annotation.
- 10 Following study for this work, the genus *Platyschineria* which was tribally unplaced in the 1980 Catalogue (p. 881) is assigned to Tachinini.
- 11 Following study of the types of type-species and other material for this work, the genera *Trypherosoma* and *Zelindomyia* are considered invalid and their names treated as junior synonyms of *Gynandromyia* (**syns n.**). See key XXV and discussion there following. The 1980 Catalogue (pp. 861–862) should be modified accordingly. The following new combinations result from the synonymy: *Gynandromyia crypta* (Verbeke, 1962) **comb. n.**, *Gynandromyia fumigata* (Verbeke, 1962) **comb. n.**, *Gynandromyia gilva* (Verbeke, 1962) **comb. n.** and *Gynandromyia grossa* (Verbeke, 1962) **comb. n.**
- 12 A work by Verbeke on the genus *Hemiwinthemia* published in 1973 had not appeared in the *Zoological Record* by the time that the manuscript for the 1980 Catalogue was completed and was overlooked. The entry for *Hemiwin-*

themia in the Catalogue (p. 863) should be augmented by the inclusion of two additional species, as follows: *francoisi* Verbeke, 1973:4, South Africa; *stuckenbergi* Verbeke, 1973:6, Mozambique. For reference see Verbeke (1973) in Bibliography to present work.

- 13 The name *Ossidingia* has long been in synonymy with *Winthemia* but I prefer to see its type-species, *O. cruciata* Wiedemann, recognised as constituting a distinct genus near to *Winthemia*. For its characterisation see Key XXVI.
- 14 Comparison during this work of the male holotypes of *Archiclops africanum* Mesnil, 1968 and *Chlorolydella (Brachychaetoides) varipes* Mesnil, 1970, both from Mt Kilimanjaro, Tanzania, showed no notable differences, and *varipes* is here considered synonymous with *africanum* (**syn. n.**). In Crosskey (1980) the latter name is placed (as *africana* because of the rules of gender ending) in the genus *Gymnophryxe* Villeneuve because *Archiclops* Bischof is preoccupied. Examination of *africanum* (**syn. varipes**) shows that the species cannot satisfactorily be considered congeneric with *carthaginiensis* Bischof, the type-species of *Archiclops* Bischof, but should be retained in *Brachychaetoides* Mesnil. It is uncertain whether a close relationship exists between *Brachychaetoides* and *Chlorolydella*, although the former was originally described as a subgenus within the latter. It is here preferred to rank *Brachychaetoides* as a full genus, and to treat it provisionally as monospecific for *Brachychaetoides africanus* (Mesnil, 1968) **comb. n.**, pending comprehensive revisionary study of the genera that may or may not be closely allied, particularly *Chlorolydella* Townsend, *Prosopodopsis* Townsend and *Gymnophryxe* Villeneuve. The 1980 Catalogue (pp. 876–877) should be modified accordingly, and the entry for *Gymnophryxe* genus deleted. (With the removal of *africana* Mesnil to a valid genus *Brachychaetoides* the genus *Gymnophryxe* is currently unrepresented in the Afrotropical area.)
- 15 In the 1980 Catalogue (p. 877) the nominal taxon *Kaiseriola* Mesnil, originally described by Mesnil (1970:105) as a subgenus of *Diaprochaeta* Mesnil, was listed as a straight synonym of the latter and not accorded validity. Examination of *aperta* Mesnil, the only species assigned to *Kaiseriola*, shows that the latter does not convincingly have the same facies as *Diaprochaeta* and I now consider the synonymy incorrect. Instead I prefer to rank *Kaiseriola* as a valid genus, monotypic for *K. aperta* (Mesnil, 1970) **comb. n.** The main characters of *Diaprochaeta* (restricted to exclude *aperta*) and *Kaiseriola* are indicated by their placements in Eryciini Key XXX.
- 16 Examination of the ♂ holotype of *Histochoeta pulchricornis* Villeneuve (Canadian National Collection, Ottawa) shows that Mesnil's (1970:109) placement of this nominal species in *Chlorolydella (Brachychaetoides)* is unsatisfactory, and that it has all essential characters of *Prosopodopsis*. The new combination *Prosopodopsis pulchricornis* (Villeneuve, 1938) **comb. n.** is here established.
- 17 This genus is additional to the 1980 Catalogue and should be added to p. 880 immediately preceding the entry for *Sturmiopsis*. Required information: *Schembria* Rondani, 1861b:110. Type-species: *Schembria meridionalis* Rondani, 1861, by monotypy. One undescribed species, South Africa.

AIMS AND FORMAT OF THE KEYS

The main aim of the keys is to provide a practical means of identifying dry (usually pinned) adult specimens of Tachinidae to the generic level, and, by means of annotations built into the keys at each generic exit, to show the user what the prospects are thereafter for more refined identification to the species level. For many genera the prospects are nil at the present time because of the extreme dearth of generic revisions to modern standards, and within modern generic concepts, that characterises the state of the art in Afrotropical tachinid taxonomy. The user will see time and again in the key annotations an entry for a particular genus such as 'revision much needed'. Such statements have a dual purpose: they are there to tell the key user that the chance of getting a reliable species identification within this genus is low (at least without reference to one of the very few specialists on Afrotropical Tachinidae), but also to indicate to any would-be student of the group where the obvious revisionary priorities lie.

Many of the basic criteria for the phylogenetic classification of Tachinidae are either not observable on the adult flies (eg. host relations, structure of first stage larvae), or can only be inferred from the adult (eg. reproductive method of female) or directly observed on it (eg. structure of male and female terminalia) with some difficulty. Practical identification, since it routinely involves only the adult fly, is inescapably dependent almost entirely upon the features that can be readily seen in the external morphology of adults—even the genitalia being of little use for basic sorting and recognition of material in collections. All the keys in this work are therefore based solely on easily seen characters that need no special preparation or microscopical technique.

The externally visible adult morphology in Tachinidae frequently does not correlate very precisely with phyletic grouping, and few groups of Diptera give more trouble in their satisfactory definition than the supra-generic taxa of tachinids. The subfamily level is notoriously difficult, because each recognised subfamily contains a great miscellany of forms which, however unified they may be in their host relations (eg. the Phasiinae parasites of bugs and the Dexiinae parasites of beetles), show great heterogeneity of adult form and often a large amount of confusing and sometimes unstable range of variation—eg. in the chaetotaxy (ie. the formalised arrangement of bristling). Furthermore, there is much confusing convergent resemblance between members of different subfamilies, particularly when extremes of apomorphy in different evolutionary lines have produced forms with greatly reduced bristling or similarity of abdominal mechanisms for dealing with hosts. As a consequence, the subfamily level is not one that is conveniently usable for routine practical first sorting of unidentified material and no attempt has therefore been made to give a key to subfamilies. One can be found, by anyone interested in having such a key, in an earlier work on the Tachinidae of the Oriental region (Crosskey 1976:10–15): it will work to a large extent for the most commonly collected forms in Africa.

For the present work, which is orientated wholly towards the practical identification to generic level of wild-caught specimens, it has been considered best to provide first a key to tribes (disregarding the subfamily level), such key providing the master entrée key (pages 218–231) to the 30 tribal keys in which the

188 genera so far recognised in tropical and southern Africa have been placed. (It should be noted that provision of a single straight-through key to all genera, eliminating the tribal as well as the subfamily level, was considered. It was rejected on the grounds that the large quantity of supportive characterisation, see below, and the extensive annotation would make a single key excessively cumbersome as it would necessitate over 200 substantial couplets and be difficult for back-tracking.)

All keys are regularly dichotomous, and many couplets contain information of two kinds, firstly the basic character(s) chosen for key separation and contrasting in each half of the couplet, and secondly a square-bracketed entry of supplementary information that helps to support a route through the key or to clinch an exit-identification. The 'bonus' information given in square brackets at the generic-name exits is specially comprehensive for those genera that have never been studied and placed in keys since their original descriptions, or that remain very little known for other reasons. For such genera it is possible to make fairly complete generic diagnoses with the information given by using the characters mentioned in the parenthetical entries in conjunction with those used in the body of the key to reach the exits.

The tribal sequence in which the keys to genera are arranged follows that adopted by Crosskey (1980) in the *Catalogue of the Diptera of the Afrotropical Region*. It should not be supposed, however, that this sequence has special and accepted phylogenetic significance except in so far as it arranges the tribes within widely recognised subfamily taxa (see accompanying 'Check-list of Genera'). None of the keys attempts to bring out supposedly related tribes or genera in juxtaposed half-couplets or even in near-together couplets, and it should not be thought that proximity of taxa in keys implies anything about phyletic relationship. In fact the opposite is likely to be true, for the keys are deliberately artificial and rely as much as possible on easily seen attributes which as often as not clearly have little message as indicators of phyletic affinity.

The annotations at each generic exit have been printed in small type to differentiate them clearly from the main text of the keys. They include pertinent references to where keys can be found for the identification of species within the genus concerned, or to the best (or only) description when there is only one species in the genus. In each annotation the starting statement of the number of species in the genus refers to the number of *described and named species known from tropical and southern Africa*; it does *not* include any species of the genus concerned that are known only from Madagascar or other islands of the Afrotropical region lying outside the range of the work, although these are mentioned when appropriate. The existence of known undescribed species is noted; it is specially important in some of the genera annotated as being in need of revision and in the few genera found in the area covered but as yet without local named species (eg. *Schembria*, *Stomina*).

Abbreviations in the keys. To shorten the text without losing clarity certain standardised abbreviations are used to describe the chaetotaxy of the thorax and the positioning of the important setae of the legs, as indicated below. The wing vein abbreviations used are clear from Fig. 11.

Abbreviations for thoracic setae are:

<i>acr</i>	acrostichal	<i>pra</i>	pre-alar
<i>dc</i>	dorsocentral	<i>prst acr</i>	presutural acrostichal
<i>ia</i>	intra-alar	<i>prst dc</i>	presutural dorsocentral
<i>post acr</i>	postsutural acrostichal	<i>prst ia</i>	presutural intra-alar
<i>post dc</i>	postsutural dorsocentral	<i>sa</i>	supra-alar
<i>post ia</i>	postsutural intra-alar	<i>stpl</i>	sternopleural

Information on the number, position and significance of these setae is given in the annotated glossary of terms that forms the next section of this paper.

For describing the positions of setae on the legs the common convention is used of imagining the leg extended at a right angle to the longitudinal axis of the fly's body, when the positions can be described as:

<i>a</i>	anterior	<i>p</i>	posterior
<i>ad</i>	anterodorsal	<i>pd</i>	posterodorsal
<i>av</i>	anteroventral	<i>pv</i>	posteroventral
<i>d</i>	dorsal	<i>v</i>	ventral

Note: *a seta on the tibia indicated by any of the italicised letters given above is on the shaft of the tibia (not at its end) unless otherwise stated.*

T = abdominal tergite and the numbering of tergites is as shown on Fig. 15, seen from above the first 'segment' being T1 + 2 and the last segment that is normally visible T5.

ANNOTATED LIST OF KEY CHARACTERS AND TERMS

The following alphabetical list shows the terminology used in the keys for the various morphological features that are mentioned, and should be used in conjunction with the explanatory figures (Figs 1–15). The annotations are aimed at providing some guidance on the importance or frequency of characters, and in particular at calling attention to the genera found in tropical and southern Africa in which some unusual or unique feature occurs. A few references are included when it is desirable to correlate use of a term with an alternative found in recent literature.

Abdominal T1 + 2. The apparent first segment of the abdomen, formed compositely of fused first and second tergites (Fig. 15).

Acrostichal setae (acr). The innermost two longitudinal rows of setae on the mesonotum (Fig. 8). These setae are usually well differentiated in most Goniinae and Tachininae (with a normal maximum of 3 + 3) but may be absent or very reduced as in Phasiini and some Minthoini. When only one pair is present it is usually the prescutellar pair, but occasionally the middle presutural pair.

Antennal axis. An imagined horizontal line through the head profile at the level of the antennal insertions (Fig. 4). This is an important landmark for describing head form when the head is seen in profile.

Appendix. A spur-like vein of varied length that continues almost directly towards the wing edge from the bend of vein *M* (designated *M*₂) (Fig. 11). The appendix is usually only present when the bend is abruptly angulate instead of a gentle curve. Occurs haphazardly in various groups, eg. *Brachelia*, *Glaurocara*, *Nemoraeta*, *Trioxoclea*.

Arista. Setiform or style-like part of the antenna attached externally to the base of the third antennal segment (Fig. 1). Provides useful characters according to whether it is virtually bare, with short microscopic hair (*pubescent*) or with very long hair (*plumose*), or according to whether it is thickened on much of its length and has either or both of its two basal segments (*aristomeres* of McAlpine *et al.* 1981) elongate. Forms with both basal segments lengthened typically have most of the arista thickened, and the elongation is conspicuous (eg. *Gymnoglossa*, *Marshallomyia*, *Platyschineria*, *Trichactia*). Forms with long-plumose arista are not numerous, but include some Dexiini, and a scattering of unrelated genera (eg. *Amesiomima*, *Cahenia*, *Peristasisea*).

Barrette. A small subrectangular area on the pleural region of the thorax differentiated between the pteropleuron and the hypopleuron (Fig. 7). The area is normally bare or almost completely so but is haired along its length in a few Goniinae (most Ethillini and Winthemiini, *Leucocarcelia*). Termed *katepimeron* (barrette) in McAlpine *et al.* (1981).

Basal node of vein R_{4+5} . A slightly swollen basal part of vein R_{4+5} of the wing near its junction with R_{2+3} (Fig. 11). The node usually bears at least one hair, and sometimes several, but is occasionally bare (some Phasiini, Blondeliini, Leskiini). In a few unrelated forms it bears a single unusually strong setula or seta (eg. *Metacemyia*, *Oxymedoria*, *Phytomyptera*).

Basal scutellar setae. The pair of marginal setae nearest to the scutellar base (Figs 9 & 10) (except when, very rarely, undeveloped). The most consistently present pair of scutellar marginal setae in the Tachinidae, very seldom absent (eg. some Cylindromyiini and Minthoini).

Bend of wing vein M . The forward curvature or angulation of the median vein (M) where the bifurcation of M_1 and M_2 appendix occurs, or if there is no such bifurcation (as is common) then the part of M where a forward change in its general direction occurs before it attains the wing margin or joins the base of the petiole (Figs 11 & 12). The nature of the bend, particularly whether it forms a widely obtuse gentle curve or a sharp 90° or even acute angle, provides an important taxonomic character. A few species belonging to unrelated genera have lost the apical part of M (ie. M_1 , see Fig. 11) and therefore have no bend (see special key XXXI).

Cell R_5 . The wing cell distal to crossvein *r-m* and enclosed by vein R_{4+5} anteriorly and veins M and M_1 posteriorly (Figs 11 & 12). An important key character is provided by this cell and its associated veins according to whether it is 'open' or 'closed'. If veins R_{4+5} and M_1 reach the wing edge separately from each other (even though very narrowly) then cell R_5 is *open* (as in Fig. 11), but if these veins coalesce so as to form a common vein ('petiole') before reaching the wing edge then this cell is *closed* (as in Fig. 12). In the latter case the cell is described as 'petiolate', and sometimes for indicating the length of the petiole as 'long-petiolate' or 'short-petiolate'; the former denotes a petiole about twice as long as *r-m* or subequal in length to *m-cu* and the latter a petiole about subequal in length to or shorter than *r-m*. Some intraspecific variation in short-petiole length sometimes occurs, and cell R_5 closure may be exactly at the wing edge. The cell is nearly always open in Goniinae and Dexiinae, and forms with very

long petiole mainly occur sporadically in Phasiinae, Dufouriinae or Tachininae (eg. *Alophora*, *Aulacephala*, *Catharosia*, *Euthera*, *Imitomyia*, *Litophasia*, *Pandelleia*, *Periscepsia*, *Rondaniooestrus*, *Trioxoclea*). Cell R_5 = cell r_{4+5} in McAlpine *et al.* (1981).

Crossvein m-cu. The most distal crossvein connecting veins M and Cu_1 (Figs 11 & 12). This is the discal medial-cubital crossvein (dm-cu) of McAlpine *et al.* (1981). The position at which *m-cu* meets M (either mid-way between $r-m$ and the bend or nearer the latter) and its remoteness from the wing edge sometimes provide characters (see *last section of Cu₁*). In Voriini (Figs 99 & 100) *m-cu* is usually exceptionally oblique. Very rarely it is completely absent (*Apomorphomyia*, *Phytomyptera*, *Phytomypterina*).

Crossvein r-m. The very short length of wing vein connecting veins R_{4+5} and M and closing cell R_5 at its basal end (Fig. 11). Always present in Tachinidae and significant as a character only as a reference point for determining proportions on long veins or proportional length of petiole.

Dichoptic. Of the head, with eyes widely separated from each other (cf. holoptic).

Discal setae. Setae standing medially or submedially on a specified surface, usually scutellum or abdominal tergite.

Divaricate. Directed outwards from one another. Used only with reference to ocellar setae that neither curve backwards (recline) nor forwards (procline) but more or less directly outwards towards the eyes.

Dorsocentral setae (dc). The two longitudinal rows of setae on the mesonotum outside of the acrostichal setae (Fig. 8). Apart from the presutural seta and the first supra-alar seta these are usually the strongest and most stable of the mesonotal setae, and the number of dorsocentrals in each row before and after the transverse suture has great value as a key character. The normal maximum number of dorsocentrals is 3 + 4, and this complete complementing is usual in many Goniinae and some Tachininae (eg. Nemoraeni, Tachinini, *Brachelia*), but is very exceptional in Phasiinae (though occurring in *Euthera*) and uncommon in Dexiinae (though it occurs in *Billaea*). Dorsocentral complements of 2 + 3 or 3 + 3 are particularly frequent in the Tachininae (Campylochetini, Glaurocarini, Leskiini, Linnaemyini, Palpostomatini, Rondaniooestrini, Thelairini, Voriini and Wagneriini for instance all have such complements) but occur elsewhere—including Goniinae such as the Acemyini and most Blondeliini, and many Dexiinae and Dufouriinae. A few forms such as the Phasiini have the dorsocentrals almost entirely undifferentiated, and unusually low complement numbers sometimes occur elsewhere (eg. as low as 0 + 1 in some Cylindromyiini and 1 + 1 sometimes in Ormiini).

Epistomal axis. An imagined horizontal line through the head profile at the level of the epistomal margin (Fig. 4).

Epistomal margin. The anteroventral edge of epistome (lower facial margin of McAlpine *et al.* 1981). See under epistome.

Epistome. The lower anterior part of the head below the face, above or forwards of the mouth-opening and between the vibrissae (when present as normal) (Figs 1 & 2). The form of the epistome provides important taxonomic characters. Often there is no epistome clearly differentiated from the face (eg. Nemoraeni,

most Minthoini) but often the epistome is warped forwards from the face so as to form a rather sharp edge between face and mouth-opening (*epistomal margin*); in the latter case the epistome can be clearly seen protruding beyond the insertion of the vibrissa on its vibrissal angle (Fig. 1) when the head is viewed in profile. A projecting epistome is most common in Tachininae, including the majority of Tachinini, Linnaemyini and Leskiini, but occurs for example in *Rossimylops* (Dufouriinae) and in the subgenus *Mormonomyia* (Phasiinae)—in the last being so prominent as to make the head appear almost nasute (Fig. 17). A few aberrant forms with extremely vestigial mouthparts and small mouth-opening have a very long narrow strip-like epistome that runs directly into the facial region without any trace of an epistomal margin (*Aulacephala*, *Eutrixopsis*, *Rondaniooestrus*, *Therobia*: see Figs 75, 76, 78).

Erect. Standing upright in relation to the surface, eg. as typical of abdominal discal setae (cf. recumbent).

Excavate. Used with reference to the mid-dorsal depression that is usually present in abdominal T1 + 2, and which may either be confined to the base of this tergite or extend at least in the mid-line for its whole length. When the depression is complete for the full length, T1 + 2 is described as 'excavate to its hind margin'. T1 + 2 is excavate to the hind margin in nearly all Goniinae exclusive of Siphonini and in many other forms, but not so in nearly all Phasiinae and many groups of Tachininae (eg. Glaurocarini, Palpostomatini, Thelairini, most Minthoini). The excavation is almost always incomplete in forms with long subcylindrical or fusiform abdomen such as *Cylindromyiini*. In some Dexiini the excavation is deep and narrow and the sides of T1 + 2 correspondingly strongly raised.

Face. The anteromedian surface of the head below the antennae and between the facial ridges (Fig. 2).

Facial carina. A strong vertical ridge on the face separating the antennae (Fig. 5). When a true facial carina is present (eg. many Dexiini, *Euthera*, *Imitomyia*) its shape may be varied (bulbous or flattened, roof-like etc.) but it is distinctly visible when the head is seen in profile. Some forms without such a carina may have the face slightly raised in the area immediately below the antennal bases, or (eg. *Rondaniooestrus*) on its whole height, but not so as to be visible in profile.

Facial profile. The anterior outline of the head between the antennal base and the epistome when viewed in profile.

Facial region. The face, facial ridges and parafacials collectively.

Facial ridges. The flattened, or more often raised, strips differentiated on each side of the face that separate it from the parafacials (Fig. 2). The ridges may be setose, ie. armed with rather strong downcurved setae, or setulose, ie. bearing rather small setulae that curve downwards or lie rather recumbently appressed to the surface, but are frequently bare. A description of the facial ridges as 'bare' does not exclude the frequent presence of a few small hairs or setulae at the extreme lower end immediately above the vibrissa. Presence of setae or setulae on the ridges is typical of some Tachininae (eg. *Elpe*) and many Goniinae (eg. *Chlorolydella*, *Compsilura*, *Dolichocolon*, *Pales*, *Phorinia*, *Pretoriana*) but

the facial ridges are bare in almost all Phasiinae and Dexiinae. In a few aberrant forms the ventral ends of the facial ridges are flattened and expanded (see *subfacials*).

Fascia. A transverse band on the dorsum of thorax or abdomen.

Frons. The anterodorsal region of the head bounded by the eyes laterally and extending from the ocellar triangle to the lunula, ie. the interfrontal area and parafrontals collectively (Fig. 2). Typically the frons is well developed in both sexes, although most often wider in females than males; in a few forms it is equally very broad in males and females (eg. *Cahenia*, *Cylindromyiini*, *Siphonini*, *Wagneriini*, *Voriini*). In many forms the eyes of the male approach each other very strongly or even meet and the frons is then consequently almost eliminated (holoptic or subholoptic head in the keys). In some forms the female as well as the male has an holoptic head (many Phasiini, *Eutrixopsis*, *Imitomyia*, *Peristasisea*: see Figs 78 & 79). When the frons is broad the head is referred to in the keys as dichoptic.

Frontal setae. The setae of the paired rows of setae standing on the inner edges of the parafrontals (Fig. 3). These setae are typically present, but may be virtually absent or reduced and hair-like in forms with holoptic heads and extensively obliterated frons. In Phasiinae and Dexiinae the rows of frontal setae extend down on the parafrontals about to the level of the lunula or base of the antenna but in Tachininae and Goniinae they typically reach down to the middle of the second antennal segment and sometimes beyond.

Gena. The lateroventral region of the head between the bottom of the eye and the lowermost edge of the head when seen in profile (Fig. 1). The 'genal depth', ie. the distance between the extreme bottom of the eye and the lower edge of the head (Fig. 6) is used as a key character in proportion to the eye-height or to the width of the profrons or antenna. If the eyes are small and rounded (eg. *Cyrtocladia*, Fig. 46) the gena is enormous in some forms, but when the eyes are very large and fill most of the side of the head (eg. *Allothelaira* (Fig. 42), *Leucocarcelia*, *Lubutana*) the gena is represented by no more than a shallow strip whose depth is less than the width of the third antennal segment.

Genal dilation. The swollen haired part of the gena that extends forwards from the postbucca (Fig. 2). Commonly the genal dilation extends forwards well towards the vibrissal angle and occupies much or even virtually all of the genal region between eye and lower margin of the head (eg. *Rondaniooestrus*), but it is often undeveloped (in which case the gena is mainly bare). In forms that lack the dilation and have a very deep gena the extensive genal region is conspicuously bare and contrasts sharply with the haired postbucca behind (eg. *Eutrixopsis*, *Microphthalma*). Vestiture of the genal dilations is almost always hair-like, but stronger setation occasionally occurs.

Holoptic. Of the head, with the eyes meeting each other or almost so. In such forms the *frons* and *vertex* (q.v.) may be virtually absent. *Subholoptic* is used for the condition in which the eyes are very strongly approximated but do not actually meet (cf. *dichoptic*).

Humeral calli. The paired convexities forming the anterolateral corners of the thoracic dorsum (Fig. 8).

Humeral setae. Setae standing on the humeral calli. Except in some Phasiinae with one or none, there are normally at least two clearly differentiated humerals and three or four is usual. In the latter case the three strongest stand either in line or in a triangle. More than four setae occur in many Tachinini and Winthemiini (also in the ethilline genus *Zelindopsis*).

Inner vertical setae. The main pair of erect setae standing on the summit of the vertex (Fig. 3). These setae are almost always strongly developed if the head is dichoptic, but may be minute and hair-like on holoptic heads. Usually the two inner verticals are subparallel but occasionally they are directed inwards and crossed (eg. *Gynandromyia*, *Oxymedoria*, *Dejeania*).

Interfrontal area. The median area of the frons flanked by the parafrontals and extending from the ocellar triangle to the lunula (Fig. 2). Termed the frontal vitta by McAlpine *et al.* (1981). The area is normally well developed in forms with dichoptic heads, especially in the females, but even in these it may be almost obliterated (as it is in forms with holoptic heads) by the meeting of parafrontals in the mid-line of the frons. The interfrontal area has no vestiture.

Intermediate abdominal tergites. The middle two of the apparent four main segments of the abdomen when seen from above, ie. tergites 3 and 4 together.

Intra-alar setae (ia). The setae of the mesonotum standing external to the dorsocentral setae and approximately in line with the middle of the postalar callus (Fig. 8). The number, and to some extent the position, of the intra-alars has taxonomic value and usefulness occasionally as a key character. The maximum number of intra-alars in the series is 1 + 3, and this complete complementing is found in nearly all Goniinae (the main exceptions with smaller complements occurring in Blondeliini). The single presutural intra-alar is absent in Phasiinae (a few exceptions such as *Euthera*), Dufouriinae, Dexiinae and many Tachininae, but is present in several groups of Tachininae (eg. Ernestiini, Tachinini, Voriini, and the genus *Trioxoclea*). A complement of 0 + 2 intra-alars occurs widely in several groups or individual genera (eg. Dufouriini, Glaurocarini, Ormiini, Palpostomatini, Rondaniooestrini and *Allothelaira*) and there is occasionally only a single intra-alar (the last *post ia*) as in *Eutrixopsis* and some Phasiini. In the Phasiini and Catharosiini/Cinochirini some forms lack intra-alars altogether.

Last section of Cu₁. The part of vein Cu₁ (= CuA₁ of McAlpine *et al.* 1981) between its junction with *m-cu* and its end at the wing edge. This vein-section may be very short (not as long as *m-cu*) as in some Phasiini (eg. Fig. 85) but is usually subequal in length to *m-cu*. In a few forms, particularly in the Voriini, it is exceptionally long (equal to twice the length of *m-cu* or more) and in such forms *m-cu* is very remote from the wing edge (eg. *Hyleorus*, Fig. 99).

Lateral scutellar setae. A pair or more of marginal scutellar setae inserted between the basal and subapical pairs (Fig. 10). These setae are absent in many forms and are most typically present in the Goniinae with large pre-alar seta. When present they are usually smaller than either the basals or subapicals but exceptionally may be equally strong or even larger than the basals (eg. *Myxarchiclops*).

Lower calyptrae. The pair of larger membranous lobes at the wing bases rigidly attached to the suprasquamal ridges of the thorax. These are typically very large and conspicuous and widen posteriorly (often then being abutted closely to the sides of the scutellum), but forms with small ovate or subcircular lower calyptrae occur (eg. most Catharosiini-Cinochirini and Dufouriini, some Palpostomatini, *Imitomyia*). In *Apomorphomyia* the lower calyptrae are exceptionally reduced. In Ethillini (exclusive of *Mycteromyiella*) the lower calyptrae are rather abruptly bent downwards on the outer edges, and in Nemoraeni (unlike other tachinids) the upper surfaces bear long fine soft hair—either on the whole surface or near the outer margins.

Lunula. The crescentic sclerite between the antennal bases and the frons (Fig. 2). The lunula is nearly always bare, but some fine hairs occur on it sometimes in *Leucostoma* and in most specimens of *Rondaniooestrus*; it is also haired in the non-Afrotropical genera *Strongygaster* Macquart and *Clistomorpha* Townsend. The statement made in Crosskey (1973b:16) that the lunula is bare in all Tachinidae should therefore be corrected.

Marginal scutellar setae. The strong setae around the edge of the scutellum collectively. The number, strength and disposition of these paired setae (eg. as Figs 115–122) provide important key characters (see entries for *apical*, *basal*, *lateral* and *subapical* scutellar setae).

Median marginal setae. Setae standing on the middle part of the hind margin (or just before the extreme margin) of an abdominal tergite (Fig. 15).

Mentum. The sclerotised shaft or main plate of the proboscis (prementum of McAlpine *et al.* 1981).

Mesonotum. The prescutum and scutum together (Fig. 8).

Mesonotal setae. The setae standing on the prescutum and scutum collectively.

Mucronate. Produced to a stiff sharp point. Used with reference only to the anteriorly sharpened tip of the third antennal segment in a few forms.

Occipital setulae. Fine black setulae or strong hairs on the upper part of the occiput other than the postocular rows (q.v.)

Ocellar boss. A small but conspicuous prominence carrying the ocelli in some forms with entirely holoptic head, eg. *Aulacephala* male, *Peristasisea* both sexes (Fig. 79).

Ocellar setae. The pair of setae on the ocellar triangle or boss (Fig. 3). These setae are usually distinct and sometimes enormously strong (eg. *Kaiseriola*), but are sometimes totally wanting or represented by mere hairs. When present they usually bend forwards (proclinate) but sometimes they curve backwards (reclinate, eg. *Elpe*, *Gonia*, *Leucostoma*) and rarely directly outwards towards the eyes (divaricate ocellars).

Ocellar triangle. The flat or slightly raised subtriangular area of the vertex on which the ocelli are situated in their triangular configuration (a median ocellus forwards and paired ocelli behind, Fig. 2). Ocelli are almost universally present in Tachinidae but in Afrotropical forms are absent in *Latiginella* (Blondeliini) and in most *Therobia* (Ormiini).

Outer vertical setae. A pair of outwardly curved setae standing laterally on the vertex close to the eyes and outside of the inner vertical setae (Fig. 3). These

setae are very commonly undifferentiated or very weak, but are almost invariably present in females of Goniinae (an exception is *Phorocerosoma*). Often in forms where they are present in females they are weak or absent in males but some groups have them equally strong in both sexes (eg. Neaerini, Siphonini, Voriini, tribes in which the head is widely dichoptic in males as well as females).

Palpi. Paired forwardly directed appendages of the proboscis arising between the base of the mentum and mouth-opening (oral cavity). Presence or absence of palpi provides an important key character for differentiation of some genera, and the form of the palpi when present is occasionally significant (eg. the extraordinarily long slender palpi that extend far beyond the epistome in *Dejeania*). Absence or extreme reduction of palpi is infrequent in Afrotropical forms but occurs in some Cylindromyiini (*Cylindromyia*, *Prolophosia*), Catharosiini (*Litophasia*), Linnaemyini (*Gymnoglossa*, *Marshallomyia*), Minthoini (*Tipulidomima*) and Neaerini (*Neoplectops*). Palpi are present but very short in *Linnaemya*, *Prosenia* and *Trioxoclea*.

Parafacials. The paired anteroventral areas of the head separating the eyes from the facial ridges and connecting the parafrontals above to the genae below (Figs 1 & 2). Parafacials provide key characters according to whether they are bare¹ or with vestiture and occasionally by means of their width in relation to other structures (especially the third antennal segment). In many forms (especially Goniinae) the lowermost setae of the frontal rows extend down on to the upper ends of the parafacials, but *in descriptive practice and the keys the parafacials are considered to be limited to the parts lying below the level of the lowermost frontal seta*. Thus understood, the parafacials in the majority of forms are totally bare but in a variety of genera they are haired or finely setulose (eg. *Afrostormia*, *Euthera*, *Gonia*, *Macquartia*, *Palpostoma*, *Ptilocatagonia*, *Sturmiopsis*, *Winthemia* and most Tachinini). In a very few genera, notably *Cuphocera*, *Gaedioxis*, *Hystricephala*, *Pretoriana* and *Periscepsia* the parafacials bear strong setae; *Periscepsia* is unusual in that these form a single regular proclinate row.

Parafrontals. The paired areas forming the outer parts of the frons abutting against the eyes (Figs 1 & 2). These are the fronto-orbital plates of McAlpine *et al.* (1981). Normally the parafrontals are separated by the interfrontal area, but they may meet each other on the mid-part in forms with subholoptic head or be virtually obliterated except at their lower ends in a few forms where the eyes meet completely (eg. *Therobia*). Very rarely forms with widely dichoptic heads have the parafrontals exceptionally widened and contiguous in the mid-line so that the interfrontal area is eliminated (eg. ♂ of *Hypersara argentata*).

Peristome. The lower margin of the head surrounding the mouth-opening and base of the proboscis. The *peristomal setae* (not mentioned in the keys) stand around the peristome (Fig. 3). Rarely the peristome may bear a single isolated seta (as in *Apomorphomyia*, Fig. 145).

Petiolate. Provided with a petiole (q.v.).

¹ Reference to 'bare' parafacials in the keys indicates the absence of hairing and does not relate to whether the parafacials are pollinose or not.

Petiole. The length of wing vein found in many tachinids that is formed by the union of the apices of veins R_{4+5} and M_1 and closes cell R_5 before the wing edge (Fig. 12). For information on the prevalence of 'petiolation' in Afrotropical forms see under 'Cell R_5 ' above.

Pollinose. With a covering of pollinosity (q.v.).

Pollinosity. A nap-like covering to any part of the body of the fly formed by closely aggregated ultramicroscopic pubescence. Because of its extent, density and colour the pollinosity is responsible for much of the naked-eye appearance of the fly, particularly any contrasting patterns on thorax or abdomen forming spots, bands or vittae. In a few forms, thick and almost uniform coatings of pollinosity give the abdomen (sometimes also the thoracic dorsum) an attractive and obvious colour, eg. the silver abdomen of *Leucocarcelia argyrata* Villeneuve ♂ and *Winthemia terrosa* Villeneuve ♀, and the golden abdomen of *W. terrosa* ♂. An area of the body is described as non-pollinose if pollinosity is not evident at normal magnifications (up to $\times 100$); such areas are usually distinctly shining.

Postabdomen. The part of the abdomen, including the terminalia, that lies beyond segment (for practical purposes, tergite T5) five. Typically the postabdomen is largely invisible and contained within the preabdomen, but in some *Cylindromyiini* (*Besseria*, *Catapariprosopa*, *Cylindromyia*) forms a heavy recurved externally visible structure—particularly in females in which it bears various apical modifications associated with oviposition. The terminalia of females without such recurved postabdomen may also show externally visible adaptations for egg-laying or host-gripping, including for example a long projecting tubular ovipositor (some *Pandelleia*, Fig. 126), horny sharp piercers which are more or less straight (eg. *Alophora*, Fig. 125) or curved downwards (eg. *Gynandromyia* and *Compsilura*, Fig. 127), or horizontally opposed terminal forceps (*Apomorphomyia*, *Leucostoma*). In *Imitomyia* the tip of the female abdomen has large, shining, black, paired lamellae that bear erect or recurved spines.

Postalar calli. The paired convexities forming the posterolateral corners of the thoracic dorsum (Fig. 8).

Postalar setae. Strong horizontal setae standing on the postalar calli (Fig. 8). In the great majority of Tachinidae there are two such setae, but sometimes only one is differentiated in Phasiini and there is only one in the Afrotropical genus *Prolophosia*. From 3–7 postalars occur in the Oriento-Australasian tribe Rutiliini.

Postbucca. A vaguely defined area between gena and lower occiput that forms the posteroventral corner of the head (Fig. 1). This is the postgena of McAlpine *et al.* (1981). The postbuccae are haired but do not bear setae.

Postocular row. The regular row of setulae on each side of the head lying close behind the eye and differentiating the postorbit from the occiput (Fig. 3).

Postorbits. The narrow laterodorsal strips of the head lying between the eyes and the postocular rows (Fig. 1). The postorbits are bare.

Postscutellum. The transverse swollen lobe lying immediately underneath the scutellum (Fig. 7). The postscutellum is typically convex and slightly

recessed in relation to the scutellum, but is occasionally little developed and deeply recessed or even (*Apomorphomyia*, *Litophasia*) absent. In *Alophora* subgenus *Mormonomyia* it is exceptionally produced backwards, slightly squared and flattened on the dorsum (Fig. 114). The postscutellum is always bare.

Postsutural (post). Behind the transverse suture (q.v.).

Pre-alar seta. A seta standing at the extreme anterolateral corner of the scutum (Fig. 8). This is an important seta which helps to differentiate major groups of tachinids from one another and which provides (by its presence or absence or by its size when present) an important key character. The pre-alar is absent in many Phasiinae and most Ormiini and Palpostomatini but is very rarely absent in Tachininae and Goniinae. In the latter subfamily the size of the pre-alar is specially significant as a recognition feature differentiating major groups of tribes.

Preapical scutellar setae. A pair or more of setae standing on the upper surface of the scutellum in advance of its tip. The preapicals are sometimes erect and spiniform (eg. Goniini, many Voriini). In many forms they are either represented by a pair of semi-horizontal setae (or rarely erect slender setae) set well forwards from the scutellar apex and are then conveniently called scutellar discal setae (as Fig. 10).

Prescutum. That part of the mesonotum lying anterior to the transverse suture (Fig. 8).

Presutural (prst). In front of the transverse suture (q.v.).

Presutural seta. An isolated seta standing on the outermost part of the prescutum near the notopleuron (Fig. 8) and approximately in line with the pre-alar and supra-alar setae. A consistently stable and almost universally present seta, almost always strong even if other mesonotal setae are reduced. Almost never absent or hair-like except in some Phasiini.

Prevertical setae. A pair of outwardly directed setae standing on the middle or upper parts of the parafrontals in addition to, or in the place of, reclinate orbital setae. Presence of these setae is almost entirely confined to a few Tachininae and a very few Goniinae (some Exoristini, Eryciini).

Proclinate. Directed forwards, or forwards and downwards.

Proclinate orbital setae. A pair or more of strong downwardly directed setae standing externally on the parafrontals near the eyes (or in rare cases adjacent to the frontal rows) (Fig. 3). Such setae occur very commonly in females and two pairs are the normal complement. Rarely there is a long series of many pairs in both sexes (eg. *Ceracia*). Though less often present in males than females their occurrence in males is usual if the head is widely dichoptic in this sex just as in the female (eg. Siphonini, Voriini).

Profrons. A weakly defined area where the parafrontals and the parafacials meet (Figs 1 & 6). The profrons is commonly the most prominent part of the head when it is viewed in profile. It is conspicuously setose in the few forms that show an unusual multiplication in the number of setae at the lower ends of the frontal rows (eg. *Paratrypha*).

Propleural seta. A seta (sometimes duplicated) standing on the extreme anteroventral corner of the thorax (Fig. 7). This seta is almost always present even if small and rather hair-like, but rarely is totally wanting (eg. in *Leucocarcelia* and some other Carceliini, also *Anacamptomyia*).

Propleuron. The flattened and usually slightly sunken area of the front edge of the thorax below the humeral callus (Fig. 7). This is the proepisternum of McAlpine *et al.* (1981) and was called the 'propleural depression' by Emden (1945, 1947, 1960) in his papers on Afrotropical Tachinidae. In the great majority of forms the propleuron is bare but amongst the Afrotropical fauna it is haired in many Tachinini (*Dejeania*, *Chromatophania*, *Paratachina*), most Dexiini, the blondelline genera *Pelashyria* and *Prodegeeria*, in *Elpe*, and in isolated species of the genera *Cylindromyia*, *Linnaemya* and *Periscepsia*. *Catharosia* is unique in the Afrotropical fauna for having the propleuron apparently bare at first glance but bearing from one to three short stiff setae on its anterior edge (not immediately seen because of the back of the head).

Prosternum. The ventral plate of the thorax lying between and in front of the fore coxae. Typically the prosternum is either flat or grooved on its posterior part and either totally bare or with a vestiture of hairs or strong setulae on its side margins. Whether the prosternum is totally bare or not has great significance in tachinid taxonomy and features frequently in keys. Even the presence of one small hair on each side of the prosternum is sufficient for it to be described as 'haired' (or if the hair is rather longer and stronger than usual as 'setulose'), although occasional specimens are found in some groups in which a hair is present only on one side. Such specimens belong to taxa in which haired is the normal condition. Because of its importance, frequent and careful examination of the prosternum is needed in routine identification and if it is obscured by juxtaposition of the fore coxae in a mounted specimen it may be necessary for one leg to be removed in order to determine its condition. The prosternum is haired or setulose in almost all Goniinae, but bare in Phasiinae, Dexiinae and Dufouriinae. *Cahenia mima* Verbeke (Cinochirini) is exceptional among Afrotropical Phasiinae in having fine soft hairs on its prosternum. The prosternum of Tachininae is almost invariably bare but is haired or setulose in a few Afrotropical genera (*Cyrtophleba*, *Hyleorus*, *Oxymedoria*, *Palpostoma*, *Sarrorhina*, *Tipulidomima*); soft pale hair is found also on the prosternum of a few Afrotropical *Linnaemya* species.

The prosternal region is extensively membranous on either side of the prosternum itself (Figs 134–135) and typically somewhat sunken in relation to it, but in Ormiini (two Afrotropical genera, *Aulacephala* and *Therobia*) the entire prosternal region forms an inflated balloon-like structure swelling out between the fore coxae and visible when the fly is viewed from the side (Fig. 136).

Prostigmatic setae. Setae situated anterolaterally on the thorax below the anterior spiracle (Fig. 7). There may be only one strong seta on each side, but the prostigmatics are commonly multiple and directed upwards. In some Siphonini and Neaerini there is a strong downwardly curved prostigmatic seta situated below the main reclinate prostigmatic seta (Fig. 138).

Pteropleural seta. A seta standing on the upper edge of the pteropleuron immediately below the wing base (Fig. 7). This seta is usually absent or only weakly differentiated from the pteropleural hairing in Phasiinae and Dexiinae and is best developed in Tachininae and Goniinae (virtually always present in the latter). Although absent in many Tachininae the pteropleural seta attains its maximum development in some members of this subfamily, eg. *Marshallomyia*, in which it is enormous (its tip reaching back to be level with the hind margin of the lower calypter).

Pteropleuron. The area of the side of the thorax immediately behind the mesopleuron (anepisternum) and below the wing base (Fig. 7). Termed the anepimeron by McAlpine *et al.* (1981).

Reclinate. Directed backwards, or upwards and backwards.

Reclinate orbital setae. A pair or more of erect or backwardly directed setae standing on the upper parts of the parafrontals (Fig. 3). The upper orbital setae of McAlpine *et al.* (1981). These setae are best differentiated in Tachininae and Goniinae and nearly always present in the latter subfamily (sometimes undifferentiated from frontal setae and in males, particularly amongst Winthemiini, sometimes absent). The number of pairs of reclinate orbitals can provide an important key character (especially in Sturmiini and Eryciini).

Recumbent. Lying down or appressed to the surface (cf. erect).

Scutellum. The large hemispherical or subtriangular lobe of the thoracic dorsum behind the scutum. A reference point in the keys in relation to the marginal scutellar setae (q.v.).

Scutum. That part of the mesonotum lying posterior to the transverse suture and in front of the scutellum (Figs 7 & 8).

Second arisal segment. The more distal of the two basal segments of the arista. In many forms this segment is conspicuously elongated and can then provide a useful key character. Elongation of the first segment is much less common. See annotation under *arista*.

Second costal sector. The segment of the costa (anterior marginal vein) of the wing lying between the apices of veins *Sc* and *R*₁ (Fig. 11).

Seta, setula. There is no absolute criterion by which the meaning of these words is distinguished in the keys, but *seta* nearly always refers to a strong and obvious bristle forming part of the formalised arrangement of setae (ie. the chaetotaxy), and *setula* refers to a small stiffened hair. Setulae are often arranged serially, as on the costal margin, along the wing veins, down the facial ridges or in the postocular rows.

Spiniform setae. Those setae that are exceptionally thickened and spine-like and typically have a somewhat fusiform shape (not regularly and evenly tapering from base to apex). Spiniform setae are specially strongly developed in *Dejeania*, where they occur as complete erect transverse marginal series on the abdominal tergites giving these bulbous flies a very bristly appearance to the eye. They occur also on the scutellum of *Dejeania*, and as at least one preapical pair on the scutellum of most Goniini and Voriini.

Sternites. The sclerotised plates of the mid-venter of the abdomen (preabdomen).

The extent of exposure or concealment of the sternites by the wrapped-around ventral ends of the tergites varies between groups. In most Goniinae the sternites are almost entirely concealed but in many Phasiinae and Tachininae they are partially or wholly exposed to view. Most forms have sternites of substantial size, but in *Besseria* (Fig. 130) and *Catapariprosopa* (Cylindromyiini with heavy postabdomen) the sternites are very narrow and weakly defined within a very broadly open membranous preabdominal venter.

Sternopleural setae (stpl). Setae standing on the upper part of the sternopleuron (Fig. 7). These are the katepisternal bristles of McAlpine *et al.* (1981:27). Their number and arrangement provide important taxonomic characters frequently used in the keys. In the great majority of forms there are either two sternopleurals (an anterior and a posterior, ie. 1 + 1) or three; in the latter case they are most often arranged 2 + 1, but 1 + 1 + 1 and (very rarely) 1 + 2. In the Afrotropical fauna some forms with four sternopleurals (2 + 2) are found amongst the Carceliini (*Thecocarcelia*), Eryciini (eg. *Aplomya*), Goniini (*Gonia* and *Pseudogonia*), and Sturmiini (eg. *Pallexorista*). In some tribes the number of sternopleurals is uniform, eg. three in Voriini and Exoristini, two in Microphthalmini, Palpostomatini and Glaurocarini. Fewer than two sternopleural setae is a condition most frequent in Phasiinae, in which many forms have only one. Possession of only a single sternopleural is very uncommon other than in Phasiinae, but is found for example in the males of *Allothelaira* and *Leucocarcelia*. Complete absence of sternopleurals is extremely rare but happens in some specimens of Ormiini.

Sternopleuron. The large lateroventral subtriangular area of the thorax between the fore and mid coxae and below the mesopleuron and pteropleuron (Fig. 7). This is the katepisternum of McAlpine *et al.* (1981). Cited in the keys for its setae (*stpl*), and in the case of *Actia* for bearing a regular row of recumbent hairs in front of the mid coxa.

Subapical scutellar setae. The pair of setae inserted posterolaterally on the margin of the scutellum (Figs 9 & 10). These, with the basals, are the most universally present of the marginal scutellar setae and are typically the strongest setae on the scutellum. Their spacing apart from one another and from the basal setae, and their orientation (whether subparallel or divergent) sometimes provide key characters. Strong divergence of the subapicals is usual in Blondeliini (for example), and crossing or strongly converging subapicals that enclose the apicals are characteristic of Neaerini and Siphonini (Fig. 119).

Subfacials. Unusually enlarged and flattened ventral ends of the facial ridges flanking the epistome when this is in the form of a narrow flattened strip between mouth-opening and face. The subfacials are extensively haired and occur in aberrant forms of head in which the mouth-opening and mouthparts are semi-vestigial (Fig. 76), the antennae exceptionally small, and the epistomal region forms an elongate strip (eg. Ormiini, *Rondaniooestrus*).

Sublunular bulla. A knob-like swelling between the antennal bases, immediately below and continuous with the lunula. Occurs in *Alophora* and is best developed in the subgenus *Mormonomyia*, in which it is polished and shining.

Supra-alar region. The outer part of the scutum above the wing base. Not a precisely limited area but used for the lateral edge of the scutum that bears the pre-alar and supra-alar setae.

Supra-alar setae (sa). The outermost setae standing on the scutum exclusive of the pre-alar seta (Fig. 8). There are normally two supra-alar setae, one standing behind the other, of which the anterior one (first *sa* seta) is usually a very strong seta and the posterior one (second *sa* seta) a much weaker seta. The second supra-alar is present in most forms (including virtually all Goniinae), but is absent in many Phasiinae, Ormiini and Palpostomatini, and is haphazardly absent or virtually so in other members of the family (eg. sometimes in Minthoini). In a few forms, especially Tachinini and Nemoraeni, one or more supernumerary supra-alar are present interpolated between the main ones or between the pre-alar seta and the first supra-alar.

Tergites. The main segmental plates of the abdomen forming almost the entire circumference of each segment, particularly of the preabdomen (Fig. 15). Tergites 1+2, 3, 4 and 5 collectively give shape to the abdomen as seen from above and are normally all visible from this viewpoint. In a few forms T5 is tucked under or very small and not readily obvious, the abdomen then seeming three-segmented. The sutures between the tergites are nearly always well marked, but in a few Afrotropical forms (eg. *Allothelaira*, *Glaurocara*, *Platyschineria*, *Schizolinnaea*) they are virtually obliterated by fusion of the tergites and their positions indicated only by faintly impressed lines on the abdominal surface.

Transverse suture. A line impressed across the mesonotum that divides it into an anterior and a posterior part (prescutum and scutum respectively) (Figs 7 & 8).

Venter. The lower surface as a whole (especially of the abdomen).

Vertex. The upper surface of the head between the eyes and around the ocellar triangle (Figs 1 & 2). This area is precisely defined laterally by the eyes but is not precisely distinguishable from the frons or occiput. In forms with holoptic or subholoptic head the vertex may be extremely narrow or effectively obliterated. In *Therobia* with completely contiguous eyes its position is represented only by a sunken groove, but in most forms with holoptic head the vertex remains at least as an ocellar boss (q.v.)

Vestiture. The setae and hairing of a surface collectively.

Vibrissae. Paired setae inserted anteroventrally at the lower ends of the facial ridges and directed forwards (Fig. 3). Typically the vibrissae are very strong and curve inwards (often to cross), but in a few forms they are short, weak and straight or completely undifferentiated (ie. not distinguishable by size from the peristomal setae below them or the small setulae at the bottom ends of the facial ridges above them). In forms with broadly flattened and expanded subfacials and narrow strip-like epistome the vibrissae are usually undeveloped. Most often the vibrissae are inserted on slight prominences on either side of the epistomal margin (*vibrissal angles*, Fig. 1).

Vibrissal axis. An imagined horizontal line through the head profile at the level of the vibrissal insertion (Fig. 4).

Vitta. A longitudinal band or line on the dorsum of the thorax or abdomen.

KEY TO TRIBES OF TACHINIDAE PRESENT IN TROPICAL AND SOUTHERN AFRICA

This master key provides the entrée to the 30 individual keys (serially numbered I–XXX) to the genera within each tribe. Because some tribes differ from others in adult flies only by somewhat intangible combinations of characters it has sometimes been necessary (to keep the key as practical as possible) to run certain tribes out in parts. Easily observed features are used wherever possible and it should be appreciated that many of them probably have little phyletic significance. Characters cited are seldom strictly 'diagnostic' for a tribe but happen to fit the Afrotropical members covered by this work.

1. Eyes hairy (the hairing usually long and dense but easily visible in silhouette even if short and rather sparse) 2
- Eyes bare or virtually so (some minute hairs may be detectable at high magnifications) 16
2. Fore coxae bare on most of the inner anterior surface (Fig. 139) 3
- Fore coxae haired on almost the entire anterior surface, short fine recumbent hairs present over the inner part that is normally bare in Tachinidae (Fig. 140) 15
3. Ocellar setae reclinate. Propleura haired. [Facial ridges setose and parafacials bare] **Campylochetini** [key X—p. 243]
- Ocellar setae proclinate or absent. Propleura bare (except in *Periscepsia propleuralis* and a few *Linnaemya* species) 4
4. Wing cell R_5 long-petiolate and parafacials with a row of very strong downcurved setae. Prosternum bare. [Presutural *ia* and pteropleural setae both absent. Abdominal T1+2 without median marginal setae]
Wagneriini (part) [key X—p. 243]
- These features not present simultaneously, if R_5 conspicuously petiolate (*Gymnoglossa*) then parafacials bare or if parafacials with strong setae then cell R_5 not petiolate (and prosternum setulose). Prosternum bare or setulose. 5
5. Palpi normal, fully developed 6
- Palpi absent or conspicuously reduced short-filiform or papilliform. [Epistome strongly projecting between vibrissae. Facial ridges bare. Prosternum usually bare but with soft hair in some species. Three *post dc* setae. Abdominal T1+2 without median marginal setae. (If eye-hair short and wings banded check genus *Schizolinnaea*)]
Linnaemyini (part) [key XVIII—p. 257]
6. Prosternum totally bare 7
- Prosternum haired or setulose (care needed: sometimes only one hair or seta on each side) [atypical winthemiine specimen seen with bare prosternum, see key XXVI couplet 4] 8
7. Parafacials bare. Epistome moderately to strongly prominent between the vibrissae and visible in profile. Mid tibia with at least three strong *ad* setae. [Scutellum with three or four pairs of marginal setae. Abdominal T1+2 excavate to its hind margin and without median marginal setae]
Ernestiini [key XVII—p. 256]

- Parafacials finely haired on their whole height. Epistome not at all prominent, the margin invisible in profile in front of the vibrissal insertions. Mid tibia with one or two *ad* setae (an inconspicuous small third seta basad of the main two in *Macquartia nitidicollis*). [Scutellum with three pairs of marginal setae. Abdominal T1+2 with or without complete excavation and with or without median marginal setae. (If eye-hair rather short and body colour metallic dark green to blue-violet check genus *Porphyromus*)]
Macquartiini (part) [key XIII—p. 248]
- 8. Lower calyptrae turned rather abruptly downwards near their outer margins. Barete fully haired along its length
Ethillini (part) [key XXV—p. 269]
- Lower calyptrae not turned rather abruptly downwards near their outer margins, the marginal parts of the calyptrae more or less in the same plane as the remainder (except sometimes in *Winthemia* species but then differing by having soft crinkly white or yellow hair on thorax). Barete usually bare at least posteriorly and often almost entirely (except fully haired in *Winthemiini*). 9
- 9. Pre-alar seta short and weak, much shorter than the first *post dc* seta and usually shorter than the first *post ia* seta 10
- Pre-alar seta moderately or very strong in relation to the size of the other mesonotal setae, usually as long as or longer than the first *post dc* seta and much longer than the first *post ia* seta 11
- 10. Wing with bend of vein *M* forming an open, evenly rounded, obtuse curve (Fig. 111) without any trace of an *M*₂ appendix or fold. Mid tibia with one *ad* seta **Blondeliini** (part) [Key XXIII—p. 262]
 [Almost all Afrotropical Blondeliini have bare eyes (see couplet 70). Running out here are only the genus *Compsilura* with densely long-haired eyes and an undescribed species of *Protopofrontina* with some short sparse eye hair.]
- Wing with bend of vein *M* moderately to very strongly abrupt and usually with a definite *M*₂ appendix or fold in the wing surface (Fig. 108) (*M* usually changing direction at about 90° at the bend itself and not forming a widely obtuse curve). Mid tibia with two or more *ad* setae
Exoristini (part) [key XXIV—p. 267]
- 11. Barete finely haired along its length (except sometimes partly bare in females of *Nemorilla*). [Parafacials usually finely haired on their whole height. Lower calyptrae sometimes bent abruptly downwards on outer part, such species with some soft pale crinkly thoracic hair. 2–3 *stpl* setae. Humeral callus often with five setae. ♂ often without reclinate orbital setae]
Winthemiini [key XXVI—p. 274]
- Barete entirely or mainly bare, if hairs present then these few and confined to anterior end (except barete fully haired in *Leucocarcelia argyrata* but then only one *stpl* seta) 12
- 12. Eyes very large, occupying almost the whole side of the head, the gena reduced to a narrow strip below the eye that is not as deep as the width of the third antennal segment or of the profrons (Fig. 70). [Hind coxa often with a long fine seta or setula on its posterodorsal margin (Fig. 141). 3 + 4 *dc* setae] 13

- antennal foveae and usually extends from the bases of the antennae to the epistome (the carina visible on much of its length when fly seen in profile, eg. as in Figs 27 & 32) 19
- Head without a facial carina, the face usually either flat or sunken and not visible in profile (occasionally the mid-facial region slightly raised, especially just below the antennal bases) 21
19. Wings with a pattern of transverse black bands in the apical half (Fig. 93). Antennae very long and in the dependent position reaching below the level of the epistome; antennal axis above level of eye-middle (Fig. 24). Facial carina in the form of a broad swelling of the whole facial region that is slightly sharpened vertically in the mid-line.¹ [Flies superficially resembling African black-bodied species of the tabanid genus *Chrysops*] **Eutherini**
 [Tribe monogeneric for *Euthera*, for key to species see Emden (1960:382–383). Note that *E. burtti* Emden in Emden (*loc. cit.*) is synonymous with *E. mannii* Mik.]
- Wings without such pattern. Antennae very short or of medium length, not reaching to epistomal margin; antennal axis at or below level of eye-middle. Facial carina not so, forming a sharp narrow ridge or an abrupt keel somewhat flattened on its anterior face, often fusiform in outline and sometimes bulbously tuberculate 20
20. Proboscis geniculate and exceedingly long and slender, the apical part very attenuate and as long as the mentum (Fig. 25). Head subholoptic in both sexes. Abdominal vestiture lacking definite setae. Wing cell *R*₅ with long petiole subequal in length to *m-cu*. ♀ terminalia exerted and showing a pair of spine-bearing dorsal lamellae **Imitomyiini** [key V—p. 237]
- Proboscis not geniculate, usually short but if very elongate (*Prosenia*, *Prosenoides*) then apical part inconspicuous and very much shorter than mentum. Head often subholoptic in ♂ but always widely dichoptic in ♀. Abdomen as normal, with strong setae in the vestiture as well as hairing. Wing cell *R*₅ open or closed, if closed then petiole short and not longer than *r-m*. ♀ terminalia not exerted **Dexiini** (part) [key VI—p. 238]
21. Prosternum totally bare 22
 [Note: except for *Blepharella setigera* complex, the taxa running here have the facial ridges bare (ie. with only the usual few setulae immediately above vibrissae). If at this point the specimen simultaneously has bare prosternum and setose facial ridges proceed to key XXVIII (Sturmiini) and check for *Blepharella*. (*Blepharella setigera* complex is exceptional for Sturmiini, and Goniinae in general, because of its bare prosternum and cannot be run out elsewhere in this tribal key).]
- Prosternum haired or setose (but sometimes only a single hair on each side) (eg. as in Figs 134 & 135). [Very rarely a specimen may show the prosternum bare on one side but with a hair or seta on the other: such specimens should be treated as 'prosternum haired' and run on from here to couplet 61] 61
 [Note: forms with vestiture on the prosternum frequently have the facial ridges setose, most often have 1 + 3 *ia* setae, sometimes have as many as four or five *stpl* setae, and usually have the rows of frontal setae descending below the level of the antennal insertions.]

¹ In some *Chromatophania* with wing patterning the facial region is somewhat raised so as to be just visible in profile. On key characters there is slight risk of confusion between the totally unrelated genera *Euthera* and *Chromatophania*. The latter genus has soft hair on the posterodorsal surface of the hind coxa (as characteristic of the tribe Tachini to which it belongs), whereas the hind coxae are bare posterodorsally in *Euthera*.

29. Palpi absent 30
 — Palpi present (conspicuous, but sometimes short-filiform or small if mouthparts vestigial) 32
30. Metathorax between hind coxae and abdominal base completely sclerotised. Abdomen with a conspicuous large recurved postabdomen. One or two *post ia* setae. [Wing cell R_5 with petiole. No pteropleural seta. Abdominal T1+2 not excavate to hind margin. Abdomen elongate fusiform or subcylindrical] **Cylindromyiini** (part) [key II—p. 233]
 — Metathorax between hind coxae and abdominal base membranous medially. Abdomen without an exerted and recurved postabdomen. Three *post ia* setae 31
31. Parafacials haired. Wing cell R_5 petiolate. 2 + 3 *dc* setae. Pre-alar seta strong, equal in size to or larger than first *post dc* seta. Pteropleural seta gigantic, extending back to be level with end of lower calypter. Arista with both basal segments much elongated. Mid tibia with three or more *ad* setae. [Genus *Marshallomyia*] **Linnaemyini** (part) [key XVIII—p. 257]
 — Parafacials bare. Wing cell R_5 narrowly open to wing edge. 3 + 4 *dc* setae. Pre-alar seta very small, *much* smaller than first *post dc* seta. Pteropleural seta very short and inconspicuous. Arista with only its second segment elongate. Mid tibia with one *ad* seta. [Genus *Neoplectops*] **Neaerini** (part) [key XXI—p. 261]
32. Proboscis geniculate and extremely long and slender (Fig. 65). [Genus *Siphona*] **Siphonini** (part) [key XXII—p. 261]
 [Running out at this exit are specimens of *Siphona* which, atypically for this genus, have the prosternum entirely bare.]
- Proboscis usually short but if long and slender then not geniculate 33
33. Wings with a well defined narrow dark brown cross-band in a preapical position (over cell R_5 and *m-cu*) and also dark brown anterobasally. Abdominal T3 and T4 with deep transverse shining anterior depressions that give the abdomen an irregular dorsal profile (Fig. 128). [Parafacials with a single regular row of long downcurved setulae. Wing cell R_5 with very long petiole. Very small, body length c. 3 mm]. [Genus *Plesina*] **Dufouriini** (part) [key V—p. 237]
 — Wings without an isolated narrow dark cross-band in the apical half, usually uniformly hyaline or faintly smoky (bicolourous yellow and brown or uniformly dark brown or dark brown basally and paler apically in some forms, a few *Wagneriini* with dark spots on the cross-veins). Abdominal T3 and T4 without transverse depressions 34
34. Parafacials each with a row of several strong downcurved setae on the whole height. [Wing cell R_5 petiolate and bend of *M* with appendix or fold. No pteropleural seta. 0 + 3 *ia* setae] **Wagneriini** (part) [key X—p. 243]
 — Parafacials bare or haired but without a row of strong setae (one very strong seta present in *Voria* at extreme upper end near bottom of frontal row) . . 35
35. Fore coxae with fine short recumbent hairing on most or almost the whole of the anterior inner surface (Fig. 140). Wing vein R_1 setulose or bare. [Nearly always three *post dc* setae and three pairs of scutellar marginal setae] . . . 36

- Fore coxae bare on almost the whole of the inner anterior surface, at most only haired on this surface near its apex (Fig. 139). Wing vein R_1 bare . . . 38
 [The holotype and only known specimen of *Amesiomima fulvella* has an adventitious setula at the extreme end of R_1 on one wing and two on the other but this vein is probably normally bare in *Amesiomima*.]
- 36. Wing vein R_{4+5} with setulae extending well beyond cross-vein $r-m$; $m-cu$ very remote from wing edge, the last section of vein Cu_1 subequal in length to or slightly longer than the penultimate section and very much longer than $m-cu$ (eg. as Fig. 100). Scutellum usually with a pair or more of erect spiniform preapical setae. [No pteropleural seta. Abdominal T1+2 excavate to its hind margin and without median marginal setae]
Voriini (part) [key X—p. 243]
- Wing vein R_{4+5} with the setulae either confined to the basal node or at most extending along the vein as far as $r-m$; $m-cu$ not remote from wing edge, the last section of vein Cu_1 very much shorter than the penultimate section and subequal in length to $m-cu$. Scutellum without erect spiniform setae 37
- 37. Eyes small and genal region exceptionally large, the genal depth equal to or greater than eye-height and greater than the *length* of the whole antenna (eg. Fig. 46). Epistome constricted to a long narrow strip by approximation of the subfacial regions. Parafacials very large (as wide as length of third antennal segment) and with short fine hairing. Abdominal T1+2 without median marginal setae and T3 and T4 without median discal setae. Wing vein R_1 bare . .
Microphthalmini (part) [key XII—p. 247]
- Eyes very large and occupying almost all the side of the head, the gena correspondingly small and its depth only about equal to the length of the *second* antennal segment (Fig. 41). Epistome normal. Parafacials narrow (subequal in width to antenna) and bare. Abdominal T1+2 with median marginal setae and T3 and T4 with median discal setae. Wing vein R_1 setulose
Thelairini (part) [key XI—p. 246]
- 38. Parafacials haired or finely setulose, at most bare only at lower ends 39
- Parafacials bare 42
- 39. Arista thickened on its whole length and with both its basal segments extremely elongate (Fig. 59). Head very large and with extremely wide frontal and facial regions (as in Goniini) in both sexes, parafacial about as wide as the eye seen in profile. Wing with well developed M_2 appendix at bend of M (as long as or longer than $r-m$). [Mesonotal setae mostly very weak. Wing cell R_3 petiolate. Abdomen uniformly reddish yellow, very rotund, with intersegmental sutures almost obsolete and vestiture consisting almost entirely of recumbent hair (setae represented only as very short and inconspicuous stubby marginals on T4 and T5)]. [Genus *Platyschineria*]
Tachinini (part) [key XIX—p. 258]
- Arista mainly slender, thickened only at its base and both basal segments extremely short and inconspicuous. Head without exceptionally wide frontal and facial regions, both sexes holoptic or eyes of male slightly approximated, parafacial in profile very much narrower than eye. Wing vein M without appendix at the bend 40

40. One *post ia* seta. Head holoptic in both sexes, uppermost eye facets enlarged compared to lowermost facets and ocelli situated on a prominent ocellar boss (Fig. 78). Vibrissae absent and no definite vibrissal angles (epistome forming a constricted strip that merges into the face without a defined epistomal margin). [Genus *Eutrixopsis*] **Palpostomatini** (part) [key VII—p. 241]
- Two *post ia* setae. Head not holoptic in either sex, uppermost eye facets not or only slightly larger than lowermost facets and ocelli not projecting on a boss. Vibrissae present and vibrissal angles and epistomal margin distinct . . 41
41. Wing cell R_5 long-petiolate (the petiole about twice as long as *r-m*). Abdominal T1+2 with median marginal setae. ♀ terminalia with horizontal pincers-like forceps. Ocellar setae reclinate. [Black bodied forms with black legs and very large opaque white lower calyptrae] **Leucostomatini** (part) [key IV—p. 236]
- Wing cell R_5 open to wing margin. Abdominal T1+2 without median marginal setae. ♀ terminalia without horizontal forceps. Ocellar setae proclinate. [Body with mainly tawny ground colour, abdomen thickly overlaid with pale pollinosity, legs reddish yellow (except dark tarsi), lower calyptrae small and rounded]. [Genus *Mesnilana*] **Dufouriini** (part) [key V—p. 237]
42. Head profile subtriangular, the head length *very* much less at epistomal axis than at antennal axis (Fig. 18) and the antennae and facial profiles very elongate. Wings coloured, either yellow-orange anterobasally and brown on remainder or more or less uniformly dark brown **Cylindromyiini** (part) [key II—p. 233]
- Head profile not conspicuously subtriangular, if slightly so and antennae very long then wings colourless (head not or only a little shorter at the epistome than at the profrons). Wings usually colourless or only faintly smoky, dark brown basally or preapically or narrowly along veins in a few forms (uniformly dark brown in a few Phasiini) 43
43. Pre-alar seta strong, long and conspicuous (subequal in size to first *post dc* seta or to the strongest humeral seta). [Two *stpl* setae. 2 + 3 *dc* setae] . . . 44
- Pre-alar seta very small or absent, often hair-like, much smaller than these setae 46
44. Arista with very long plumosity. Genal region of head extremely large, its depth equal to eye-height (Fig. 47) (whole genal region bare). Subfacial regions of head completely approximated so that epistome is eliminated between the small mouth-opening and the face. One *post ia* seta. [Genus *Amesiomima*] **Microphthalmini** (part) [key XII—p. 247]
- Arista bare or micropubescent. Genal region of head not exceptionally large, its depth very much less than eye-height. Subfacial regions of head not approximated so as to eliminate the epistome. Two *post ia* setae 45
45. Wing cell R_5 open and bend of vein *M* without appendix. Epistome forming a very sharp sunken edge between prominent vibrissal angles, vibrissae extremely strong. Antennae long, third segment much longer than genal depth and about four times longer than second segment (Fig. 53). Lower calyptrae

- small and subcircular, inner margins diverging from base away from the scutellum. Scutellum with two pairs of marginal setae. [Genus *Pseudominthodes*]
Minthoini (part) [key XIV—p. 250]
- Wing cell R_3 petiolate and bend of M with an M_2 appendix (Fig. 97). Epistome forming a parallel-sided strip running from the very reduced mouth-opening to merge with the face and flanked by greatly enlarged setulose subfacial regions (Fig. 75); mid-line of face raised. Antennae extremely small, shorter than depth of gena and third segment not longer than second. Lower calyptrae broad, with inner posterior angle near to scutellum. Scutellum with three pairs of marginal setae **Rondanioestrini** [key VII—p. 241]
46. Mesonotum with a very poorly developed complement of setae and its vestiture almost all hair-like: dorsocentral setae (and also acrostichal setae) not more than 0 + 1, presutural setae often absent, intra-alar setae absent (except one *post ia* in *Bogosia*), and pre-alar and second *sa* setae both absent (except small *pra* seta present in *Gymnosoma*). Abdominal vestiture entirely hair-like or almost so, at most only some short and very weakly differentiated marginal setae on some tergites **Phasiini** [key I—p. 231]
- Mesonotum with a normal well developed complement of setae: dorsocentral setae at least 1 + 3 and usually 2 + 3 (sometimes more), presutural seta present, two or three *post ia* setae (one or none occasionally in Minthoini), and pre-alar and second *sa* seta usually both present even if very small (absent in a few exceptions). Abdomen with strong marginal setae, and sometimes also discal setae, in addition to the hairing (except vestiture sometimes all hair-like in *Besseria*) 47
47. Ocellar setae reclinate. Abdomen of ♀ terminating in horizontally opposed forceps or lobate plates. [2 + 3 *dc* setae. 0 + 2 *ia* setae. Black forms with broad opaque white calyptrae] **Leucostomatini** [key IV—p. 236]
- Ocellar setae proclinate or absent. Abdomen of ♀ otherwise 48
48. Epistome warped forwards from the face and its margin clearly visible in front of the vibrissal insertion when the head seen in profile 49
- Epistome not or but slightly warped forwards from the face and its margin not protruding so as to be clearly visible in front of the vibrissal insertion when the head seen in profile 52
49. Abdomen with a very large externally visible postabdomen that is recurved below the preabdomen; venter of preabdomen almost entirely membranous and deeply sunken between sharp and widely separated in-rolled ends of tergites (Fig. 130). Abdomen of ♂ closely covered with very long fine recumbent hair, marginal setae long but weak and sometimes undifferentiated **Cylindromyiini** (part) [key II—p. 233]
- Abdomen not so, without heavy recurved postabdomen and ends of tergites meeting in mid-line of venter; strong setae present in addition to hairing . . . 50
50. Arista thickened on at least two-thirds of its length and with its second segment conspicuously elongate (about three or four times as long as its width). Wing cell R_3 long-petiolate (petiole about twice as long as *r-m*). [Three *stpl* setae. Mid tibia with one *ad* seta. Antennae very long and almost reaching epistome]. [Genus *Istoglossa*] **Leskiini** (part) [key XVI—p. 253]

- Arista thickened only at its base and both basal segments non-elongate and very inconspicuous. Wing cell *R*₅ open or (*Rossimylops*) closed at or just before wing margin 51
51. Lower calyptrae small and circular, their inner margins widely removed from the scutellum. Chaetotaxy showing 2 + 3 *dc* setae, two strong *post ia* setae, two *stpl* setae, and three pairs of scutellar marginal setae (of which apicals crossed and strongest of the three pairs) simultaneously. [Body and leg ground colour entirely black]. [Genus *Rossimylops*] **Dufouriini** (part) [key V—p. 237]
- Lower calyptrae widening posteriorly, hind margins not uniformly circular and inner posterior parts not far removed from scutellum. Chaetotaxy not showing such combination of setae simultaneously. [Some forms black but often pallid-bodied forms with long legs and often largely reddish-yellow legs] **Leskiini** (part) [key XVI—p. 253]
52. Metathorax between hind coxae and abdominal base completely sclerotised. Abdomen with a heavy postabdomen recurved under broadly membranous venter of preabdomen (Fig. 123). Acrostichal setae absent. One *stpl* seta. [Genus *Catapariprosopa*] **Cylindromyiini** (part) [key II—p. 233]
- Metathorax between hind coxae and abdominal base membranous medially (except weakly sclerotised in some *minthoini* but then other characters not fitting). Abdomen without a heavy postabdomen recurved under the preabdomen. Acrostichal setae present (at least either one presutural or one postsutural pair, usually more). One or more *stpl* setae (usually 2–3) 53
53. Three *post ia* setae 54
- Two *post ia* setae (one or none occasionally in *Minthoini*) 56
54. Mid tibia with one *ad* seta. Dorsocentral setae 2 + 3. Scutellum with three pairs of marginal setae. Arista often plumose. [Ground colour of body and legs black] 55
- Mid tibia with two *ad* setae. Dorsocentral setae 3 + 3. Scutellum with four pairs of marginal setae (pair of small lateral setae present in addition to basals, subapicals and strong crossed apicals). Arista bare. [Ground colour of body pallid yellow or greyish yellow, legs yellow except for dark tarsi.] [Genus *Cololeskia*] **Leskiini** (part) [key XVI—p. 253]
55. Scutellum with three pairs of marginal setae comprising basals, subapicals and horizontal crossed apicals (laterals absent). One pair of *post acr* setae (prescutellar). Fore tarsi of both sexes laterally compressed and dilated or of ♂ widened from side to side. Mid tibia with submedian *v* seta. Arista plumose **Minthoini** (part) [key XIV—p. 250]
- Scutellum with three pairs of marginal setae comprising basals, strong laterals and subapicals (apicals absent). Two or three pairs of *post acr* setae. Fore tarsi not enlarged or dilated in either sex. Mid tibia with (*Medina*) or without (*Trigonospila*) submedian *v* seta. Arista bare or with long pubescence **Blondeliini** (part) [key XXIII—p. 262]
56. Scutellum with two pairs of marginal setae 57
- Scutellum with three pairs of marginal setae 58

57. Arista bare. Three *stpl* setae. Head dichoptic and ocelli non-prominent. Postscutellum strongly developed, projecting back nearly as prominently as scutellum. Lower calyptrae widened posteriorly and with inner margins near to scutellum. [Genus *Platydexia*] **Dexiini** (part) [key VI—p. 238]
- Arista with long plumosity. Two *stpl* setae. Head holoptic in both sexes and with unusually prominent ocellar boss. Postscutellum very weak, much recessed in relation to scutellum. Lower calyptrae subcircular and with inner margins widely diverging from scutellum. [Genus *Peristasissea*] **Palpostomatini** (part) [key VII—p. 241]
58. Abdomen with sutures between tergites almost obsolete, marked only by faint depressions in abdominal surface. Mid tibia with two or more *ad* setae. [Abdomen reddish-yellow or mainly so, shape ovate or rotund] 59
- Abdomen with normal well-developed sutures between tergites. Mid tibia with one *ad* seta (small second *ad* basad of main one in *Minthodes* but then cell *R*₅ long-petiolate) 60
59. Arista plumose. Bend of wing vein *M* without appendix. Eyes extremely large, gena reduced to very narrow strip whose depth is much less than width of antenna (Fig. 42). Dorsocentral setae 3 + 3. One *stpl* seta in ♂, two *stpl* setae in ♀. Abdominal T3 and T4 without discal setae in ♂ and with such setae in ♀. [Genus *Allothelaira*] **Thelairini** (part) [key XI—p. 246]
- Arista bare. Bend of vein *M* with *M*₂ appendix. Eyes not unusually large, genal depth much greater than width of antenna. Dorsocentral setae 2 + 3. Two *stpl* setae. Abdominal T3 and T4 without discal setae. [Scutellum with a pair of very small subparallel apical setulae between close-set subapical setae] **Glaurocarini** [key IX—p. 243]
60. Abdomen long subcylindrical or subfusiform and with median discal setae on T3 and T4. Wing vein *M* with sharply formed bend (often a right angle or even acute angle) that usually has a long or short *M*₂ appendix or fold; cell *R*₅ open or petiolate. Fore tarsi of ♀ (sometimes also of ♂) enlarged and laterally compressed (with extremely small claws). [Chaetotaxy varied, 2 + 3 or 3 + 3 *dc* setae, 0–2 *post ia* setae, 1–3 *stpl* setae, *pra* and second *sa* setae present or absent] **Minthoini** (part) [key XIV—p. 250]
- Abdomen not elongate, its shape subovate or subcircular and at least the first three visible tergites (T1 + 2, T3, T4) very much wider than their length; T3 and T4 with or without discal setae. Wing vein *M* with widely obtuse and gently rounded bend or if with bend moderately abrupt (some *Pandelleia*) then no trace of appendix. Fore tarsi not enlarged or flattened **Dufouriini** (part) [key V—p. 237]
61. Metathorax between hind coxae and abdominal base completely sclerotised across its width. Palpi minute (appearing virtually absent). One *stpl* seta. Mid tibia without *ad* setae. Abdomen clavate and bicolourous (yellow basally and black apically). [Genus *Tipulidomima*, ♀ unknown] **Minthoini** (part) [key XIV—p. 250]
- Metathorax between hind coxae and abdominal base membranous medially. Palpi well developed. Two or more *stpl* setae. Mid tibia with at least one *ad* seta (very exceptionally undifferentiated). Abdomen not so 62

62. Epistome warped forwards from the face so that its margin is clearly visible in front of vibrissal insertions when head seen in profile (eg. as Fig. 50). [Three *post dc* setae. Mid tibia with two *ad* setae. Abdominal T1+2 not excavate to its hind margin] 63
- Epistome flat or weakly warped forwards from the face, occasionally sharply defined, not conspicuously visible in front of vibrissal insertions when head seen in profile 64
63. Three *stpl* setae. Two *post ia* setae and three *prst dc* setae. Wing with cell *R*₅ open to wing margin and second costal sector bare ventrally. [Genus *Oxymedoria*] **Leskiini** (part) [key XVI—p. 253]
- Two *stpl* setae. Three *post ia* setae and two *prst dc* setae. Wing with cell *R*₅ closed and short-petiolate and with second costal sector haired ventrally. [Genus *Sarrorhina*] **Minthoini** (part) [key XIV—p. 250]
64. Supra-alar region of thorax with only one seta, the first *sa* (both *pra* and second *sa* simultaneously absent). Intra-alar setae 0 + 2 (rarely 0 + 1). [Dorso-central setae 1 + 3 or 2 + 3. Two *stpl* setae. Mid tibia with one *ad* seta. Lower calyptae small and subcircular. Abdominal T1+2 not excavate to its hind margin. Pallid yellowish- or reddish-orange-coloured forms] 65
- Supra-alar region of thorax with at least two and almost always with three setae (pre-alar and second *sa* setae normally present in addition to first *sa* seta but sometimes small). Intra-alar setae usually 1 + 3 (the *prst ia* sometimes absent and rarely only two differentiated *post ia*) 66
65. Arista with long plumosity (Fig. 22). Parafacials bare. Scutellum with three pairs of marginal setae. [Genus *Cahenia* (part)] **Cinochirini** (part) [key III—p. 235]
- Arista bare or virtually so. Parafacials with short stubby hairing. Scutellum with two pairs of marginal setae (Fig. 117). [Genus *Palpostoma*] **Palpostomatini** (part) [key VII—p. 241]
66. Lower calypter bent abruptly downwards on its outer part so that the margin is in a semi-vertical orientation compared to the remainder of the calypter. [Inner vertical setae cruciate. Humeral callus with the three main setae in a triangle. 3 + 4 *dc* setae. Pre-alar seta at least equal in size to first *post ia* seta. Abdomen of ♀ with short, downcurved, piercing ovipositor] **Ethillini** (part) [key XXV—p. 269]
- Lower calypter not bent downwards on its outer part, the outer edge of the calypter therefore not in a different orientation from the remainder 67
67. Pre-alar seta short and weak, usually shorter than the first *post ia* seta and much shorter than the first *post dc* seta 68
- Pre-alar seta moderately or very strong in relation to the size of the other mesonotal setae, much longer than first *post ia* seta and nearly always longer than the first *post dc* seta 71
68. Subapical scutellar setae crossing before their apices or strongly converging, enclosing the small apical setae (Fig. 119). [Head widely and equally dichoptic in both sexes and both sexes with proclinate orbital setae. Three *stpl* setae. Abdominal T1+2 not excavate to its hind margin and without median marginal setae; abdominal tergites without discal setae. Wing vein *R*₄₊₅

- usually setulose at least to *r-m*, veins R_1 and Cu_1 often setulose. Hind tibia with three dorsal preapical setae (*pd* present). Bend of wing vein *M* forming a gentle obtuse curve (eg. as Fig. 107)] **Siphonini** [key XXII—p. 261]
- Subapical scutellar setae subparallel or divergent from one another 69
69. Scutellum with characteristic arrangement of three pairs of strong marginal setae in which apicals crossed and horizontal and subapicals divergent (bases of latter widely separated) (Fig. 118); lateral setae always absent. [Parafacials and facial ridges bare. Three *post dc* setae. Wing vein R_{4+5} with a single (usually strong) setula on basal node; vein *M* without appendix or fold at the bend] **Acemyini** [key XX—p. 260]
- Scutellum without this exact arrangement of marginal setae 70
70. Wing with bend of vein *M* in form of an open and evenly rounded curve, or if slightly abrupt then forming a widely obtuse angle, always without trace of an appendix or fold (eg. Figs 110–111). Scutellum with the subapical setae typically divergent, and usually widely so. [Three *post dc* setae (except only two in *Eophyllophila* and four in *Rioteria*). Mid tibia usually with one *ad* seta. Abdominal T1+2 with or without complete excavation]
- Blondeliini** (major part) [key XXIII—p. 262]
- Wing with vein *M* bend moderately to very strongly abrupt, usually changing direction at about 90° and usually provided with an M_2 appendix or fold in the wing surface (eg. as in Fig. 108). Scutellum with the subapical setae subparallel. [Three or four *post dc* setae. Three *stpl* setae. Mid tibia with at least two *ad* setae. Abdominal T1+2 excavate to its hind margin]
- Exoristini** (part) [key XXIV—p. 267]
71. Ocellar setae reclinate. [Frontal and facial regions extremely wide. Either parafacials or facial ridges setulose. 3 + 4 *dc* setae. Scutellum with erect spiniform setae before the tip. Mid tibia with at least three *ad* setae. Abdominal T1+2 excavate to its hind margin and T3 and T4 without discal setae]
- Goniini** [key XXIX—p. 284]
- Ocellar setae proclinate or absent 72
72. Eyes very large, occupying almost the whole side of the head, the gena reduced to a narrow strip below the eye that is not as deep as the width of the antenna or of the profrons (Fig. 70). . . **Carcelliini** (part) [key XXVII—p. 275]
- Eyes relatively smaller, genal depth usually at least as much as width of antenna or of the profrons (narrower than profrons in a few forms with protruding profrontal region) 73
73. Vibrissae inserted at a level above that of the epistomal margin (but sometimes only slightly so). Lower calypter with a well-developed inner posterior angle and with its inner edge closely abutted against the scutellum. [3 + 4 *dc* setae (second *post dc* rarely undifferentiated so that a gap is left between first and third). Hind tibia of ♂ often with a close-set and well developed *ad* fringe of regular length or with one longer intercalary seta in the fringe. ♂ abdomen often with secondary sexual hair-patches on venter of T4, these sometimes forming dense fascicles. Humeral callus with a straight row of three setae and a fourth seta set forwards (latter undifferentiated in *Cadur-*

cia). Facial ridges bare or at most weakly setose on lower half, parafacials sometimes haired but always without setae. Abdominal T3 and T4 without discal setae] **Sturmiini** (part) [key XXVIII—p. 280]

- Vibrissae inserted about on a level with the epistomal margin. Lower calypter with its inner posterior angle usually weakly developed and rather rounded and not closely abutted to the scutellum. [Dorsocentral setae varied, 2(3) + 3(4). Hind tibia of ♂ without dense close-set regular fringe. ♂ abdomen without tight hair-fascicles but sometimes with extensive areas of short or long fine recumbent hairing ventrally (T4 or T3 and T4). Humeral setae varied. Facial ridges often strongly setose, parafacials sometimes setose. Abdominal T3 and T4 often with median discal setae]

Eryciini (part) [key XXX—p. 285]

[The distinctions between Sturmiini and the artificial group Eryciini are intangible and it may be necessary to test a doubtful specimen in both keys. Hairy-eyed forms in these groups will run out at couplet 14.]

KEYS TO GENERA BY TRIBE(S)

I. Key to Afrotropical genera of Phasiini

1. Abdominal tergites fused, sutures obliterated or indicated only by faint depressions in abdominal surface. Supra-alar region of thorax with at least two small setae, *pra* seta present in addition to first *sa* seta (sometimes also supernumerary setae including one in second *sa* position). Scutellum rugose. Abdominal surface micro-punctate. Abdomen subglobular, with a median row of 3–4 small dark brown or black spots on a shining yellow to reddish-orange background. Frons very wide in both sexes (vertex at least two-thirds as wide as an eye seen from above). Wing with cell R_5 short-petiolate, petiole subequal in length to *r-m* and at least slightly angled forwards in relation to preceding section of R_{4+5} (Fig. 84) **Gymnosoma** Meigen

[Two species: identification key in Emden (1945:434) but note that *G. roundatum* L. sensu Emden therein is correctly *G. emdeni* Mesnil.]

- Abdominal tergites not fused, separated as usual by obvious sutures. Supra-alar region of thorax with one seta (first *sa*), no pre-alar seta. Scutellum not rugose. Abdominal surface not micro-punctate. Abdominal shape varied, if ground colour yellow or red then no spot pattern. Frons width varied. Wing with or without petiole (if present of varied lengths) 2
- 2. Head holoptic or subholoptic in both sexes (Fig. 77) (eyes if not quite meeting, separated by a narrow strip no wider than anterior ocellus). Wing cell R_5 with very long petiole (subequal in length to *m-cu*, as in Fig. 85). Abdominal vestiture uniformly hair-like. Postscutellum conspicuously bulbous and at least as prominent as the scutellum. ♀: ovipositor forming a 'horny', shining, black exerted piercer (eg. as Fig. 125). Legs all brown or black

Alophora Robineau-Desvoidy s.l. (see key Ia)

[Six species in two subgenera: identification key, complete except for *A. jeanneli* Mesnil, in Emden (1945:431–432).]

- Head dichoptic, eyes only conspicuously approximated in ♂ of *Bogosiella* (but then interfrontal area complete and frons at narrowest point at least

three times as wide as anterior ocellus). Wing cell R_5 either petiolate or open. Abdominal vestiture with some short setae differentiated from the hairing either laterally or along margins of posterior-most tergites (except in *Bogosiella* ♀). Postscutellum not strikingly large and prominent, usually distinctly recessed in relation to scutellum. ♀: without piercer. Legs yellow or reddish yellow at least on basal parts of some femora, often extensively pale 3

3. Wing cell R_5 open, just closed or with a short petiole subequal in length to $r-m$. Posterior intra-alar seta present. Two *spl* setae (exceptionally only one). Abdomen elongate, with subparallel or weakly convex side-margins and with T6 well visible from above; hind margins of posterior tergites with short recumbent marginal setae. Frons very broad and equally so in both sexes. Parafrontals dull pollinose, with a velvety appearance when the pollinosity is dark brown or black **Bogosiella** Rondani

[Five species: identification key in Emden (1945:428).]

- Wing cell R_5 long-petiolate, the petiole about twice as long as $r-m$. Posterior intra-alar seta absent. One *spl* seta. Abdomen subovate, with strongly convex side-margins and with T6 not visible from above; hind margins of tergites without differentiated setae but ♂ with a few short stubby setae on the side-margins of each tergite. Frons of ♂ narrower than that of ♀, in facial view inner eye margins of ♀ slightly and evenly converging towards vertex and those of ♂ 'pinching' rather sharply towards each other at mid point of frons (Figs 73–74). Parafrontals bare and shining, with a specially highly polished appearance when dark brown to violaceous-black

Bogosiella Villeneuve

[One species: *B. pomeroyi* Villeneuve, widespread, description in Villeneuve (1923:78–79).]

Ia. Key to Afrotropical subgenera of *Alophora*

1. Head seen in profile appearing strongly nasute because of exceptionally prominent development of the epistome (Fig. 17). Parafrontals bare except for the row of small frontal setae. Scutellum with one or two pairs of marginal setae, if two then the apical pair very fine and situated on the scutellar dorsum in a distinctly preapical position (sometimes with transverse row of long strong hairs, Fig. 114). Antennal bases separated by a very prominent shining sublunular bulla. Postscutellum extending well beyond the scutellar apex and with a flattened subtruncate form (Fig. 114). ♂ with long lanceolate or spatulate scales at least on the mesopleuron and usually also as long fringes on some or all femora, sometimes also on the costal base (Fig. 85) and sides of the humeral calli **Mormonomyia** Brauer & Bergenstamm
- Head seen in profile not conspicuously nasute, the epistome only weakly warped forwards from the face (Fig. 16). Parafrontals haired between the frontal row and the eye. Scutellum with two pairs of strong setae, the apical pair situated on the apex (Fig. 115). Antennal bases not separated by a strongly prominent bulla. Postscutellum not extending conspicuously beyond the scutellar apex and with smoothly convex form. ♂ without lanceolate or spatulate scales on any part of the body **Alophorella** Townsend

II. Key to Afrotropical genera of *Cylindromyiini*

1. Palpi absent. Posteroventral declivity of the thorax forming a deep convex fully sclerotised postcoxal bridge that widely separates the abdominal base from the hind coxae. Wing cell *R*₅ with well developed petiole. Acrostichal setae absent 2
- Palpi present. Posteroventral declivity of the thorax not so (except in *Catapariprosopa*), widely membranous medially. Wing cell *R*₅ open or with scarcely any petiole (except long petiole present in *Paraclara dimidiata*). Acrostichal setae present at least as the prescutellar pair (except absent in *Catapariprosopa*) 3
2. Postalar callus with one seta. Lower calyptrae small, flat and subcircular, remote from scutellar base (their inner margins divergent from one another when fly seen from above). One *stpl* seta. One humeral seta. Scutellum with one pair of enormous divergent marginal setae (subapicals), sometimes with a pair of minute divergent apical hairs between them. One *post ia* seta (anterolaterally near transverse suture). Wing with bend of vein *M* forming an evenly rounded curve and apical part of *M* running more or less directly forwards to meet the petiole (Fig. 88). 0 + 1 *dc* setae. Abdomen with pedunculate base, pinched-in just beyond the anterolateral corners of T1

Prolophosia Townsend

[One species: *P. petiolata* Townsend, widespread, description in Curran (1934a:140, as *Cylindromyia atypica* Curran. Variation in material seen suggests that synonymy of Curran's nominal species with *petiolata* by Emden (1945:403) needs reassessment.]

- Postalar callus with two setae. Lower calyptrae moderately large and strongly humped medially, close against scutellum anterobasally (their inner margins subparallel or convergent when fly seen from above). Two *stpl* setae (except one in *C. marginalis*). Two humeral setae. Scutellar setae not so, two or three pairs of marginals (if two then either basals or apicals absent, the latter crossed when present as in most species). Two *post ia* setae of which anterior one near transverse suture very strong and normally much larger than posterior one (very exceptionally the latter missing). Wing with bend of vein *M* forming a more or less definite angle (often with short *M*₂ appendix) and the apical part of *M* running obliquely forwards to meet the petiole (Fig. 89). At least 1 + 1 *dc* setae, usually more (an aberrant specimen seen without *prst dc* seta). Abdomen usually subcylindrical or subfusiform ***Cylindromyia*** Meigen

[Twenty-two species: identification keys in Curran (1934a:122–124) and Emden (1945:404–406, as *Ocyptera*), but incomplete and revision needed.]

3. Two or three *stpl* setae. Posteroventral declivity of the thorax membranous medially. Abdomen seen from above appearing quadrisegmented, without a heavy, elongate postabdomen recurved under the preabdomen (except in *Besseria*). Mid and hind tibiae without submedian *pν* setae 4
- One *stpl* seta. Posteroventral declivity of the thorax forming a deep convex fully sclerotised postcoxal bridge (as in *Cylindromyia*). Abdomen seen directly from above appearing trisegmented, with a heavy elongate postabdomen recurved under the preabdomen in both sexes (Fig. 123). Mid and hind tibiae each with a strong submedian *pν* seta (additional to the usual

submedian v or av setae). [3 + 3 dc setae. Preabdominal venter widely membranous between rolled-in ventral ends of tergites (as in *Besseria*). Head profile as in Fig. 20]. **Catapariprosopa** Townsend
[Two species: identification key in Herting (1979b:13).]

4. Head with the epistome prominent and the head length as great at the epistomal axis as at the antennal axis, shape not at all triangular in profile (Fig. 19); facial profile shorter than frontal profile and antennae short (third segment less than twice as long as second segment). Abdomen with a heavy elongate postabdomen recurved under the preabdomen in both sexes (Fig. 124); abdominal venter widely membranous, preabdomen without definite sternites after $St1$, the widely separated ventral ends of tergites somewhat rolled-in (Fig. 130); ♂ abdomen with hair vestiture of much of upper surface modified into unusually long, fine and dense recumbent hair. Small forms (length 4–6 mm) with hyaline wings **Besseria** Robineau-Desvoidy
[Three species: partial identification key in Herting (1979a:7–8).]

- Head conspicuously triangular in profile, epistome much receding in relation to profrons and head therefore very much shorter at epistomal axis than at antennal axis (eg. as Fig. 18); facial profile longer than frontal profile and antennae correspondingly elongate (third segment many times longer than second segment). Abdomen with a short slightly recurved postabdomen in ♂, without recurved postabdomen in ♀; preabdominal segments all with well-developed sternites (middle sternites visible in ♂ but concealed by meeting ventral ends of tergites in ♀). ♂ abdomen with unmodified hair. Larger forms (length 7–16 mm, usually 10–14 mm) with coloured wings 5
- 5. Abdomen with erect median discal setae on T3–T5 (occasionally haphazardly missing from one of these tergites or present as only one of the normal pair). Vibrissae present, small but definitely differentiated. Two *post ia* setae (very rarely anterior one missing). Abdomen with the intersegmental sutures almost completely obliterated by fusion. Abdominal colour to naked eye either uniformly shining black or uniformly bright orange. Wings dark brown or brownish black (the colour more or less uniform to naked eye)¹

Hermya Robineau-Desvoidy

[Five species: identification key in Emden (1945:399–400).]

- Abdomen without discal setae. Vibrissae absent. One *post ia* seta (very small and sometimes nearly hair-like). Abdomen with the intersegmental sutures nearly obliterated but their positions easily identifiable (usually marked by very narrow transverse lines of pale pollinosity). Abdominal colour not so. Wings bicolorous, smoky brown apically and posteriorly and broadly yellow-orange anterobasally (Fig. 87) **Paraclara** Bezzi

[Two species: identification key in Emden (1945:401, as *Clara*).]

¹ In the extra-limital species *H. regalis* Villeneuve from Madagascar the wing is bicolorous yellow-orange and brown as is usual in *Paraclara*. This species also lacks abdominal discal setae. Its characters are intermediate between those of typical *Hermya* and typical *Paraclara* and the latter genus is only dubiously distinct from the former. Consideration should be given to sinking *Paraclara* into a widened *Hermya* when the Afrotropical *Cylindromyiini* are revised.

III. Key to Afrotropical genera of Catharosiini and Cinochirini

1. Wing venation aberrant, apical part of *M* and crossvein *m-cu* absent (Fig. 147). Lower calyptrae virtually absent, represented by very inconspicuous strips of membrane (Fig. 146). Eye with its long axis strongly oblique (Fig. 145). Postscutellum absent. ♂ abdomen with a very deep constriction separating a shining bulbous hypopygium from the preabdomen (Fig. 150). ♀ terminalia with shining black dorsal forceps and a pair of apposed backward-pointing semi-translucent ventral lamellae. Head widely dichoptic in both sexes (Fig. 144). [Exceptionally small tachinid, length c. 2.6 mm]

Apomorphomyia Crosskey gen. n. (p. 298)

[One species: *A. lygaeidophaga* Crosskey sp. n. herein described (p. 299)]

- Wing venation not so, apical part of *M* and crossvein *m-cu* present. Lower calyptrae normally developed, conspicuous though small and subcircular or subovate. Eye with its long axis vertical or nearly so. Postscutellum present (except in *Litophasia*). ♂ abdomen not so. ♀ terminalia not so. Head dichoptic (♀ and some ♂) or subholoptic (some ♂) 2
- 2. Arista with long plumosity (Fig. 22). Scutellum with three pairs of strong marginal setae (occasionally a small fourth pair). Wing with cell *R*₅ non-petiolate and closed just about at wing margin. Two *post ia* setae. Basal node of wing vein *R*₄₊₅ with one very strong setula or with a row of strong setulae extending more than half way to *r-m*. Ocellar setae present. Three strong *post dc* setae. Head widely dichoptic in both sexes, the interfrontal area about five times as wide as a parafrontal (Fig. 81). ♀ without a piercing ovipositor. Lunula absent. [Wing venation Fig. 90] **Cahenia** Verbeke¹

[Two species: no key but differentiated (as *C. mima* Verbeke and *Mapolomyia connexa* Verbeke) in Verbeke (1960:340–344)]

- Arista bare or micropubescent. Scutellum with two pairs of marginal setae. Wing with cell *R*₅ long-petiolate. One *post ia* seta. Basal node of wing vein *R*₄₊₅ bare (sometimes one or two exceedingly minute hairs difficult to see). Ocellar setae absent. One or two *post dc* setae (? three sometimes differentiated in *Litophasia*). Head dichoptic or subholoptic, the interfrontal area not more than twice as wide as a parafrontal in either sex. Lunula present. ♀ with sharp piercing ovipositor 3
- 3. Palpi almost absent, papilliform. Parafacials wider than antenna and with transverse grooves (Fig. 1 in Dear 1980). Wing vein *M* with bend in the form of a gentle uniform curve (Fig. 2 in Dear 1980). Postscutellum absent. Propleuron bare. ♂ head nearly holoptic, parafrontals meeting and partially obliterating the interfrontal area. Wings colourless. Body and legs shining black (front of head highly polished and reflectant) **Litophasia** Girschner

[One species: *L. sulcifacies* Dear, South Africa, description in Dear (1980:218–220).]

- Palpi well developed. Parafacials narrower than antenna and without transverse grooves. Wing vein *M* bending very sharply forwards at almost a right

¹ The little-known genera *Mapolomyia* Verbeke and *Archiphania* Emden were listed for cataloguing purposes (Crosskey, 1980) as valid genera. From revisionary study for the present keys neither is considered valid. *Mapolomyia* is here placed in synonymy (**syn. n.**) with *Cahenia*, and *Archiphania* in synonymy (**syn. n.**) with *Catharosia*.

angle (Fig. 92). Postscutellum present. Propleuron usually with a few (1–3) strong erect setae on its anterior edge [care: sometimes hard to see because front angle of propleuron so close to back of head]. ♂ head with parafrontals not meeting and interfrontal area distinct on whole height of frons even if eyes strongly approximated. Wings smoky brown preapically or anteriorly (if latter the wing apices rather milky). Body black but legs usually extensively reddish yellow (both body and legs all black in *C. capensis* from South Africa but then parafacials silver pollinose). [Head profile Fig. 23]

Catharosia Rondani¹

[Three species: no available identification key.]

IV. Key to Afrotropical genera of Leucostomatini

[Note. The extra-limital species *Calyptromyia stupenda* Dear, the only leucostomatine recorded from Madagascar, is included.]

1. Wing cell *R*₅ with very long petiole (Fig. 91); bend of vein *M* abruptly angulate and remote from wing margin (distance from bend direct to margin subequal to length of *m-cu*). Presutural *acr* setae present (one submedian pair). Lunula setulose. ♀ with three *stpl* setae. ♀ abdomen uniformly shining black, terminalia with horizontal pincer-like forceps . . . **Leucostoma** Meigen
[Two species, with additional apparently undescribed species: no key and revision needed.]

- Wing cell *R*₅ open or just closed in margin; bend of vein *M* in form of a gentle even curve that is near the wing margin. Presutural *acr* setae absent. Lunula bare or at most with few minute hairs. ♀ with two *stpl* setae (? *C. stupenda* ♀ unknown). ♀ abdomen black with narrow basal bands of silvery grey pollinosity on T3 and T4, terminalia with sublamellate forceps (*C. stupenda* ♀ unknown but probably with abdomen all shining black and probably with apical pincers) 2

2. Parafacials thickly haired. ♂ with *enormous* lower calyptrae of pure white colour that extend back to conceal the abdomen unless parted. Postscutellum exceptionally large and bulbous (prominent beyond tip of scutellum). ♂ without ocellar and inner vertical setae. [Madagascar]

[*Calyptromyia stupenda* Dear]

[Description with photograph of fly in Dear (1981:501–505). Known only from ♂ which possesses the largest lower calyptrae known in any fly.]

- Parafacials bare. ♂ with lower calyptrae not so enlarged (of normal size and incapable of concealing the abdomen). Postscutellum normal, not projecting beyond scutellum. ♂ with ocellar and inner vertical setae. [Head profile Fig. 21]. [Africa, Aldabra] **Clairvillia** Robineau-Desvoidy

[One species: *C. breviforceps* Emden, description of ♂ in Mesnil (1959:29–31) as *Dionaea inermis* Mesnil².]

¹ See footnote on page 235.

² In the Afrotropical Diptera catalogue (Crosskey 1980:828) *Clairvillia breviforceps* and *Dionaea inermis* were listed, from the then literature, as separate species. Comparison of the ♀ holotypes during preparation of this work has shown that they are clearly conspecific. *Dionaea inermis* is herewith placed in synonymy (**syn. n.**) with *C. breviforceps*. A ♂ of the species, agreeing well with the ♀ holotypes except for sexual differences, is in BMNH collection from Aldabra. See comment 5 to 'Check-list of Genera', p. 200.

V. Key to Afrotropical genera of Imitomyiini and Dufouriini

1. Proboscis exceedingly long and slender, geniculate (Fig. 25), at least twice as long as head height. Head with a prominent bulbous facial carina separating deep antennal foveae. Head almost completely holoptic in both sexes; ♀ without vertical, prevertical or proclinate orbital setae, with ocelli raised on a very prominent ocellar boss (as in ♂). Upper eye facets of ♀ conspicuously enlarged. Scutellum with two pairs of marginal setae, the apical pair crossed. ♀ terminalia exerted and with a pair of large, shining, black, dorsal lamellae bearing strong erect or recurved spines. [IMITOMYIINI]

Imitomyia Townsend

[Three species: identification key to two species in Emden (1945:412, as *Diplopota*).]

- Proboscis not so, of normal non-geniculate form and shorter than head height. Head without facial carina. Head holoptic or nearly so in ♂, widely dichoptic in ♀ (but frons only a little wider than antenna in *Mesnilana* ♀); ♀ with vertical, prevertical (rarely missing), and proclinate orbital setae, ocelli not raised on a prominent ocellar boss. Upper eye facets of ♀ not enlarged. Scutellum with three, or rarely four, pairs of marginal setae (except *Plesina* with two pairs but then apicals parallel). ♀ terminalia not so. [DUFOURIINI] 2
- 2. Scutellum with two pairs of marginal setae, the apical pair parallel or slightly divergent. Wings with a dark brown cross-band (positioned over cell *R*₅ and *m-cu*); cell *R*₅ closed and long-petiolate. Parafacials with a row of strong proclinate setulae on their whole height (head profile Fig. 28)

Plesina Meigen

[Two species: generic revision with identification key including Afrotropical species in Kugler (1978:87–88, key, and 91–91, figs of wing and abdominal patterns of Afrotropical species).]

- Scutellum with three or four pairs of marginal setae, the apical pair crossed. Wings without dark pattern; cell *R*₅ usually open or closed about at wing margin (long-petiolate in most *Pandelleia*, Fig. 94). Parafacials bare (except in *Mesnilana*) 3
- 3. Parafacials with short stiff black hair on their whole height. Three *stpl* setae. Three *prst dc* setae. Pre-alar seta strong (subequal in size to first *post ia* or first *post dc* seta). Second *sa* seta present. [Thoracic ground colour tawny orange-red; thoracic dorsum and abdomen rather thickly covered with pale greyish-yellow pollinosity, former with four narrow, dark vittae and latter with slightly tessellate appearance; legs reddish-yellow except for dark tarsi. Head profile Fig. 30]

Mesnilana Emden

[One species: *M. bevisi* Emden, South Africa, description in Emden (1945:414–415), known only from ♀ holotype.]

- Parafacials bare. Two *stpl* setae (anterior one sometimes only represented by a long fine hair). Two *prst dc* setae (a setula differentiated between them in some specimens). Pre-alar seta very weak (conspicuously smaller than first *post dc* or first *post ia* seta) or completely absent (in *Pandelleia*). Second *sa* seta absent, except in *Chetoptilia* 4
- 4. Four *post dc* setae (second one smaller than first or third). Abdomen with T1 + 2 excavate virtually to the hind margin. Arista plumose.¹ Inner vertical

setae of ♀ crossing near the apices. Abdomen uniformly metallic green, blue-green, violaceous or violaceous-black. [Thorax and legs black.]

Chetoptilia Rondani

[One species: *C. plumicornis* Villeneuve, Uganda, description in Villeneuve (1942:53–54).]¹

- Three *post dc* setae. Abdomen with T1 + 2 not or hardly at all excavate. Arista bare or micropubescent. Inner vertical setae of ♀ subparallel or crossed. Abdomen not so 5

5. Mid tibia with 2–3 *ad* setae and with a submedian *v* seta. Head with the epistome seen in profile almost as prominent as the profrons (Fig. 29). Pre-alar seta present. Wing with cell *R*₅ closed just before or at the margin. ♀ with non-exserted ovipositor. Body with entirely black ground colour in both sexes. [Mesonotum with paired longitudinal bands of silver-grey pollinosity that widen anteriorly to abut the similarly pollinose humeral calli; scutellum with appearance of each half sharply alternating from silver-grey to black as fly is turned; intermediate abdominal tergites each with a basal band of silver-grey pollinosity] **Rossimylops Mesnil**

[One species: *R. whiteheadi* Mesnil, South Africa, description in Mesnil (1953b:45–146).]

- Mid tibia with one small *ad* seta and without a submedian *v* seta. Head with the epistome seen in profile much less prominent than the profrons (Fig. 26). Pre-alar seta absent. Wing with cell *R*₅ closed and with a very long petiole (Fig. 94) that is as long as or longer than *m-cu* (except *P. translucens* with very short petiole). ♀ with a very large exerted tubular ovipositor (Fig. 126), this usually long and recurved beneath the abdomen in preserved specimens. Body with ground colour not entirely black, ♂ with at least the abdomen mainly or partly bright yellow orange or tawny yellow, ♀ (including the head) almost all yellow to reddish-orange **Pandelleia Villeneuve**

[Two species: also an undescribed species from Mauritius, no available identification key.]

VI. Key to genera of Dexiini in tropical and southern Africa

[Note. Of the genera in this key only *Billaea* is known in Madagascar, but Dexiini are well represented there by several genera (see Catalogue: Crosskey 1980) for which no keys are yet available.]

1. Arista micropubescent. Scutellum with two pairs of marginal setae (basals and subapicals) and the apical setae represented by a pair of *divergent* hairs; distance between insertions of subapical setae much *less* than that between a subapical seta and its corresponding basal seta. Facial carina absent and whole facial and epistomal area unusually flat. [Head profile as Fig. 31. Wing non-petiolate and with *M* forming a gentle curve forwards, *m-cu* meeting *M* about mid-way between *r-m* and bend, second costal sector haired ventrally. Three *post dc* setae. Two *post ia* setae (not three as given in original descrip-

¹ Two species of *Chetoptilia* are known from Madagascar (Mesnil 1968a:53–55); in these the arista is micropubescent. The BMNH collection contains two specimens (♂ and ♀) from Ghana in which the arista is plumose and the body all black with a faint dark blue or violaceous tinge; these agree with Villeneuve's (1942) reference, in the original description of *C. plumicornis*, to a shining dark ♀ from Uganda that is possibly the female of this species. More probably these all-dark specimens belong to an undescribed species.

- tion). Three humeral setae. Three *stpl* setae. Parafacials bare. Abdominal tergites without discal setae] **Platydexia** Emden
[One species: *P. maynei* Emden, Zaïre, description in Emden (1954:551).]
- Arista plumose. Scutellum with three pairs of marginal setae (Fig. 116) (supernumerary fourth pair present in some *Billaea* spp.), apical pair sometimes weak but always distinct and crossed. Facial carina present or absent 2
2. Parafacials setulose on their whole height. [Facial carina absent. Propleuron haired. Four *post dc* setae or second *dc* evanescent and spaced for four. Three *post ia* setae. Three humeral setae. Three *stpl* setae. Apical scutellar setae very much smaller than basals. Wing cell *R*₅ closed at or just before margin and bend of *M* with a long *M*₂ appendix. Mid tibia with two *ad* setae. Proboscis not elongate. Abdomen without discal setae and without median marginal setae on T1+2] **Piligena** Emden
[One species: *P. mackieae* Emden, South Africa, description in Emden (1947:667–668).]
- Parafacials completely bare or setulose only on the upper parts (latter condition only in some *Billaea* species but then head with facial carina) 3
3. Wing cell *R*₅ petiolate; bend of vein *M* very sharp and with a well-developed *M*₂ appendix. Costa with a conspicuous costal spine which is subequal in length to *r-m*. 4
- Wing cell *R*₅ open or at most just closed at margin; bend of vein *M* in form of a gentle curve or strongly abrupt (in latter case with a short appendix in some species). Costa without such costal spine 5
4. Head without facial carina **Pseudodinera** Brauer & Bergenstamm¹
[Two species: South Africa, not seen and no available key. Type-material of the type-species *P. nigripes* Brauer & Bergenstamm not found in Vienna Museum for present study.]
- Head with facial carina (carina either narrow and sharp on whole height or slightly widened and bulbous ventrally)
Dolichodexia Brauer & Bergenstamm and **Dexiomera** Curran¹
[Three species: South Africa, included in key to *Dexiomera* sensu Emden in Emden (1947:638). *Dexiomera surda* Curran, type-species of *Dexiomera*, not seen and holotype formerly in Hamburg destroyed.]
5. Head with a long facial carina extending from supra-epistomal depression to lunula and separating the antennae, the carina shape ridge-like, fusiform or bulbous (eg. as in Figs 27, 32) 6
- Head without facial carina or at most with trace of a short sharp carination between antennal bases, face not or only just visible in profile (eg. as in Fig. 33) 11
6. Scutellum with the subapical setae very widely separated, distance between their bases much greater than that between a subapical seta and its corresponding basal seta; apical scutellar setae strong and subequal in size to basal setae (scutellum therefore with at least three pairs of strong marginals) ... 7

¹ The catalogue placement (Crosskey 1980) of five South African species in the three genera *Dolichodexia*, *Dexiomera* and *Pseudodinera* is based on the opinion of Mesnil (1950c) which superseded that of Emden (1947). Mesnil does not make clear how these genera can be reliably differentiated. Lack of material has prevented their study for the present work, but there appear to be few if any satisfactory generic differences.

- Scutellum with the subapical setae not widely separated, distance between the bases subequal to or less than that between a subapical seta and its corresponding basal seta; apical scutellar setae very weak and wiry not more than about half as long as subapical setae and much shorter than basal setae (scutellum therefore showing only two pairs of *strong* marginals). [Second costal sector bare ventrally. Abdomen of ♂ elongate subconical and with discal setae on T4 and T5 (sometimes also T3)] 10
- 7. Humeral callus with two setae. Mid tibia with one *ad* seta. Propleuron bare. Two *spl* setae. Three *post dc* setae (small additional *dc* between the first two in occasional specimen). [Mainly elongate forms with very long slender legs, especially in ♂] 8
- Humeral callus with 3–6 setae. Mid tibia with two or more *ad* setae. Propleuron usually haired. Two or three *spl* setae (usually three). Four *post dc* setae (? *buccata*: mesonotum damaged in only specimen). [Robust forms with legs not strikingly elongate, body often with striped thorax and sarcophagid-like facies] 9
- 8. Proboscis very elongate, slender and flexible and longer than head height (Fig. 27). Second costal sector bare ventrally. One *post ia* seta. Abdomen of both sexes without discal setae on any tergite. Sides of thorax with hairing all yellowish-white. Pteropleural seta undifferentiated 9

Prosenia Le Peletier & Serville

[One species: *P. siberita* Fabricius, widespread Eurasia and recorded Mozambique, description in Emden (1947:630–631, as *brevirostris*).]

- Proboscis not elongate, very small and only about as long as short diameter of eye. Second costal sector haired ventrally. Usually two *post ia* setae. Abdomen of ♂ with erect median discal setae on some or all of tergites 3–5. Sides of thorax with dark hairing. Pteropleural seta differentiated 9

Dexia Meigen

[Eleven species: identification key in Emden (1947:632–633).]

- 9. Abdomen with median discal setae on T3–T5. Wing vein *M* with an *M*₂ appendix that is as long as *r-m*. Facial carina with its sides pinched-in medially, much widening ventrally. Three *post ia* setae. Propleuron bare. Lower calypter with very long marginal hair '*Dexia*' *buccata* Emden

[Species of uncertain generic affiliation but not a *Dexia*, Mozambique, description in Emden (1947:633–634).]

- Abdomen without median discal setae (except ♂ of *B. setosa* Macquart from South Africa). Wing vein *M* without an appendix at the bend. Facial carina of various shapes but not pinched-in medially. Two *post ia* setae (very rarely one if anterior one evanescent, *very* rarely three). Propleuron haired (occasionally hairs few and propleuron seemingly bare at first glance). Lower calypter with very short inconspicuous marginal hair fringe. [Some forms with one or more of the following: supernumerary fourth pair of strong marginal scutellar setae, upper parts of parafacials haired, proboscis long and stiff and about length of head height, close-set *ad* fringe of sturmiine type on hind tibia] **Billaea** Robineau-Desvoidy (part)

[Eighteen species (including those with non-carinate head: see couplet 11): identification key to half the species in Emden (1947:641–642)]

10. Proboscis extremely elongate and slender, the mentum very much longer than head height **Prosenoides** Brauer & Bergenstamm
[Four species: identification key in Emden (1947:658, as *Paraprosena* in part).]
- Proboscis not unusually long, the mentum not longer than head height
Dinera Robineau-Desvoidy
[Seven species: identification key including six species in Emden (1947:657–658, as *Paraprosena* in part).]
11. Dorsocentral setae 3 + 4. Abdominal T1+2 excavate fully to its hind margin. Mid tibia with two *ad* setae. Wing with bend of vein *M* abrupt, right-angular and sometimes with a short *M*₂ stubby appendix; *m-cu* meeting *M* nearer to the bend than to *r-m*. Humeral callus with at least three (sometimes up to six) well-developed setae. [Larger and more robust forms, length 8–12 mm]
Billaea Robineau-Desvoidy (part)
[See annotation for *Billaea*, couplet 9 above.]
- Dorsocentral setae 2 + 3. Abdominal T1+2 not excavate or with short excavation not reaching to its hind margin. Mid tibia with one *ad* seta (this sometimes evanescent in long-legged ♂). Wing with bend of vein *M* forming a gentle curve or a widely acute angle, without trace of *M*₂ stub; *m-cu* meeting *M* about mid-way between *r-m* and the bend. Humeral callus with two main setae and at most a weak third. [Smaller and rather slender forms, length 3.5–7 mm, males with long slender legs] **Pretoriamyia** Curran
[Six species: identification key in Emden (1947:649–650).]

VII. Key to Afrotropical genera of Palpostomatini and Rondanioestrini

1. Prosternum bare. Wing vein *R*₄₊₅ totally bare or with one or more minute hairs confined to basal node 2
- Prosternum setose (Fig. 134). Wing vein *R*₄₊₅ with conspicuous setulae extending half way or more from the basal node to *r-m*. [Head holoptic or subholoptic in ♂ and dichoptic in ♀. Vibrissal angles well marked (Fig. 36) and epistome distinguished from face by a more or less definite margin. Parafacials haired. Supra-alar region of thorax with only one seta (both *pra* and second *sa* seta absent). Scutellum with two pairs of marginal setae, Fig. 117] **Palpostoma** Robineau-Desvoidy
[Five species: partial identification key in Verbeke (1962a:155–156, as *Hamaxiomima*) but revision needed.]
2. Arista bare. Scutellum with three pairs of marginal setae. Epistome in form of a long narrow flattened strip not differentiated from face (Figs 75 and 78). Antennae extremely small and with suborbicular third segment not or hardly longer than second segment 3
- Arista plumose (Fig. 37). Scutellum with two pairs of marginal setae. Epistome short and broad, vibrissae not much above the mouth-opening (Fig. 79). Antennae medium-sized, third segment elongate and about 2.5–3 times as long as second segment. [Head holoptic in both sexes and ocelli on promi-

nent boss (Fig. 79). Parafacials bare. Pre-alar seta present but small (missing in one specimen seen). Colour uniformly pallid reddish-yellow]

Peristasisea Villeneuve

[One species: *P. luteola* Villeneuve, eastern Africa, description in Mesnil (1959:26-27, as *Hamaxioides mellea* Mesnil).]

3. Abdomen with many irregular median discal setae. Head narrowly dichoptic, with distinct interfrontal area and frontal setae (Fig. 75). Genal region of head fully haired between postbucca and epistome (very large genal dilation present that reaches upwards to the eye and forwards to meet with haired subfacial). Mesonotal setae extremely strongly developed, including 3 + 3 *acr* setae, two post *ia* setae (anterior one near transverse suture), and very strong *pra* and second *sa* (these last sometimes fully as large as the first *sa* seta). Parafacials bare. Mid tibia with several *ad* setae. Wing with petiole of cell *R*₅ longer than *r-m* and bend of *M* sharp and usually provided with *M*₂ appendix (Fig. 97). Abdomen short and rounded, its ground colour dark but with a shifting tessellate appearance as fly is turned. [*Parasite of honey-bees: puparium with posterior spiracles in the form of very large subcircular flattened and slightly beret-like prominences*] **Rondaniooestrus Villeneuve**

[One species: *R. apivorus*, eastern and southern Africa, description with head and wing figures in Villeneuve (1916a:465-468) and figure of whole fly in Skaife (1921:197).]

- Abdomen without discal setae. Head holoptic in both sexes (Fig. 78), interfrontal area and frontal setae extremely reduced. Genal region of head without a genal dilation (Fig. 35) and totally bare between postbucca and epistome (except for a line of weak setulae adjacent to latter). Mesonotal setae weakly developed, including only 0 + 1 *acr* setae, one post *ia* seta, and no second *sa* seta (*pra* seta also usually absent but a very small *pra* sometimes occurring). Parafacials haired. Mid tibia without *ad* seta or at most with one minute *ad* setula just differentiated from the hairing. Wing with petiole of cell *R*₅ at most subequal in length to *r-m* and bend of *M* forming a gentle curve without trace of appendix. Abdomen conspicuously longer than broad, subovate, with pallid colour and non-tessellate appearance as fly is turned. [*Parasite of scarabaeid beetles: puparium with posterior spiracles very small, hardly at all raised, and with conspicuous simple slits*]

Eutrixopsis Townsend

[Three species: partial identification key in Verbeke (1962a:161) but revision needed.]

VIII. Key to Afrotropical genera of Ormiini

[*Note.* The genus *Mediosetiger* Barraclough belongs to this tribe but was not described in time for its inclusion in the key or elsewhere in this work. See Barraclough (1983).]

1. Wing with cell *R*₅ open or just closed at the margin. Supra-alar region of thorax with two setae (pre-alar and supra-alar). Head of ♀ with well-developed proclinate orbital setae near the eyes. Posthumeral setae and one pair of *prst acr* setae usually present. Ocelli usually absent, vertex of ♂ usually deeply sunken between the contiguous eyes and usually without trace of ocellar boss. Wings without markings (at most occasionally a very small dark spot on *r-m*). Smaller species, length 5-8 mm **Therobia** Brauer

[Seven described Afrotropical species: no useful key and revision needed.]

- Wing with cell R_5 closed and long-petiolate, the petiole at least twice as long as $r-m$ (Fig. 95). Supra-alar region of thorax with only one seta (supra-alar).¹ Head of ♀ without proclinate orbital setae near the eyes (weak proclinate setulae sometimes differentiated near the interfrontal strip). Posthumeral setae and *prst acr* setae absent. Ocelli present, those of ♂ on a prominent ocellar boss at the extreme vertex (Fig. 76). Wings with markings (Fig. 95), dark brown coloured on a large and conspicuous spot on $r-m$, along $m-cu$, and along the distal part of vein M (ie. from bend to petiole). Large species, length 9–13 mm. [Head profile of ♂ Fig. 38, ♀ Fig. 136]

Aulacephala Macquart

[One species: *A. maculithorax* Macquart, widespread, no modern description.]

IX. Key to Afrotropical and Oriental genera of Glaurocarini

[Note. The genus *Doddiana* has not been found in Africa, where the tribe Glaurocarini is currently monogeneric for *Glaurocara*. A species of *Doddiana* has been introduced, however, to Mauritius where *Glaurocara* also occurs and a key to indicate the distinctions between these closely allied genera is therefore given here. Both genera contain flies with mainly reddish-yellow bodies in which the rather rotund abdomen has virtually lost the sutures between the tergites. The puparium is distinctive for the exceptionally bulbous protuberant development of the posterior spiracles.]

1. Wing with bend of vein M extremely abrupt and with a definite (though sometimes very short) M_2 appendix. Scutellum with a pair of small fine straight apical setae or with some apical hairs at the tip between the bases of the subapical setae (Fig. 121). [Puparium with posterior spiracles in form of a single enormous rotund prominence shaped as a button-mushroom] [Afrotropical and Oriental regions] **Glaurocara** Thomson

[Four species: no available identification key.]

- Wing with bend of vein M moderately abrupt but rounded and without trace of M_2 appendix. Scutellum bare at the tip between the bases of the subapical setae. [Puparium with posterior spiracles in form of very large paired subcontiguous beret-like prominences] [Oriental region and Australia]

[*Doddiana* Curran]

[Non-Afrotropical but one species, *D. mellea* Wiedemann, introduced (? unsuccessfully) from Java to Mauritius.]

X. Key to Afrotropical genera of Campylochetini, Voriini and Wagneriini

[Note. These tribes were treated as distinct in the catalogue (Crosskey 1980) but their members are closely allied and might be better treated as contribal in a widened Voriini. African members are mainly rather long-bodied black tachinids with unusually strong bristling: all have three *post dc* setae, pteropleural seta absent, and abdominal T1+2 excavate to its hind margin. Except in some *Periscepsia* species which lack basals, there are three pairs of very strong marginal scutellar setae of which the apical pair is crossed and horizontal.]

1. Ocellar setae reclinate. Facial ridges with strong setae on their whole height. Propleuron haired (with much white hair). Wing with bend of M forming a wide obtuse angle without appendix (Fig. 98); basal node of R_{4+5} setulose but wing veins otherwise bare. Eyes densely haired. Two *stpl* setae. Scutellum with one pair of small horizontal discal setae (in preapical position). Preverti-

¹ One specimen of *A. maculithorax* seen with a second seta (ie. *pra*) weakly developed on one side.

cal setae absent. Outer vertical setae absent. ♂ without proclinate orbital setae. [Second costal sector haired ventrally. Three *post ia* setae. Fore coxa largely bare on anterior surface]. [Campylochetini] **Elpe** Robineau-Desvoidy [Three species: identification key in Emden (1960:351, as *Campylochaeta* [sic]). *Elpe* is used here as a valid generic name in accordance with the catalogue, but the taxon is perhaps better ranked as a subgenus of *Campylochaeta* Rondani (see Dear & Crosskey 1982:120).]

- Ocellar setae proclinate or divaricate. Facial ridges bare or (*Hyleorus*) setose on not much over half their height. Propleuron bare (except *Periscepsia propleuralis* with a very few dark hairs). Wing with bend of *M* forming an abrupt right angle or even an acute angle (with or without appendix) or if changing direction in an obtuse angle then with a long *M*₂ appendix or wing-fold; wing vein *R*₄₊₅ setulose to or beyond *r-m* and veins *R*₁ and *Cu*₁ sometimes also setulose. Eyes bare or haired. Three *stpl* setae (except a few *Periscepsia* species with two). Scutellum with erect discal setae, usually two or three pairs of which one standing at the scutellar tip above and between the apical setae is often very strong and spiniform. Prevertical setae present (except *Voria*). Outer vertical setae present or absent. ♂ with proclinate orbital setae (except *Periscepsia kirbyiformis*) 2
- 2. Wing cell *R*₅ petiolate and bend of vein *M* forming a right angle or even a slightly acute angle. Parafacials with a row of strong proclinate setae on their whole height. Presutural *ia* seta absent. Fore coxa bare on most of its anterior surface. Outer vertical setae absent (except small pair present in *P. carbonaria* and *P. caviceps*). Humeral callus with four setae arranged in a basal line of three (innermost very weak) and a strong fourth seta set forwards between the *middle* and *outermost* of the basal row. [Forms often with brown spot-like infuscation over the wing crossveins or with wings darkened anteriorly.] [Wagneriini] **Periscepsia** Gistel [Nineteen species: almost complete identification key in Emden (1960:333–336, as *Wagneria*).]
- Wing cell *R*₅ not petiolate, vein *M* either changing direction about at a right-angle but more often obtusely and then with an unusually long *M*₂ appendix or fold (Figs 99–100). Parafacials without a continuous row of strong setae on their whole height (except in *Cyrtophleba*). Presutural *ia* seta present. Fore coxa with short, fine, recumbent hair on most of its anterior surface. Outer vertical setae present. Humeral callus with four setae arranged in a basal line of three and a weak fourth seta set forwards between the *middle* and *innermost* of the basal row (this last and the one set forwards sometimes evanescent in specimens of *Plagiomima*). [Voriini] 3
- 3. Wing with vein *R*₁ bare 4
- Wing with vein *R*₁ setulose 5
- 4. Eyes haired. Facial ridges setose for at least half their height. Parafacials bare. Three *post ia* setae. Scutellum with many erect subspiniform discal setae. Abdomen with erect discal setae on T3–T5. Wing with long costal spine (Fig. 99). [Abdominal ground colour black] **Hyleorus** Aldrich [One species: *H. fasciatus* Curran, widespread, description in Curran (1938:6, in *Afroplagia*).]

- Eyes bare. Facial ridges bare. Parafacials haired. Two *post ia* setae (both strong and foremost positioned nearer to transverse suture than to hindmost seta). Scutellum without erect discal setae (only with a pair of weak recumbent discals in a preapical position). Abdomen without discal setae on any tergite. Wing without costal spine. [Head profile as Fig. 40. Abdomen orange-red on the flanks, only black on mid-line and posteriorly]

Plagiomima Brauer & Bergenstamm

[One species: *P. rufolateralis* Crosskey sp. n. herein described (p. 302).]

- 5. Wing venation aberrant, vein *M* without bend and its apical section (*M*₁) absent (the vein evanescent at the point where the 'bend' would normally be). Parafacials haired. Two *prst dc* setae. Abdomen without discal setae. Wing vein *Cu*₁ setulose basally. [Frons very broad and interfrontal area widening posteriorly. Eyes bare. Crossvein *m-cu* very strongly oblique and remote from wing edge, last section of *Cu*₁ extremely long. Second costal sector bare ventrally. Black species with first two antennal segments orange]

Reichardia Karsch

[One species: *R. insignis* Karsch, Tanzania, known only from holotype (Berlin Museum) and no modern description except for characters here given.]

- Wing venation normal, vein *M* with bend and its apical section (*M*₁) complete to wing edge. Parafacials not haired (either with strong setae or bare). Three *prst dc* setae. Abdomen with strong erect discal setae at least on T5. Wing vein *Cu*₁ bare (except *Voria capensis*) 6
 - 6. Eyes haired. Parafacials with a row of strong proclinate setae on their whole height. Wing vein *R*₁ with its apical section bare (setulae extending only to a level with the bend of vein *Sc*). Abdomen with median discal setae on both T3 and T4. Prosternum with a few fine hairs **Cyrtophleba** Rondani
- [Two new undescribed species from tropical Africa (BMNH).]

- Eyes bare. Parafacials not so. Wing vein *R*₁ setulose along its whole length. Abdomen normally without discal setae on both T3 and T4. Prosternum bare 7
 - 7. Parafacial with a very strong proclinate seta inserted at its upper end near the lowermost frontal seta, sometimes accompanied by a few hairs. Prevertical setae absent. Arista thickened on about half its length and with the second segment not elongate. Wing with *m-cu* joining *M* nearer to the bend than to *r-m* and with the last section of *Cu*₁ (*m-cu* to wing edge) shorter than the preceding section. [Antennae more or less entirely dark, at most second segment reddish apically] **Voria** Robineau-Desvoidy
- [Two species: identification key in Crosskey (1976:67).]

- Parafacials bare (disregarding the lowermost frontal setae placed unusually far down on the head). Prevertical setae present (ie. a pair of small setae curving outwards and positioned between uppermost procinate orbital and inner vertical setae). Arista thickened on most of its length and with its second segment elongate (about three times as long as wide). Wing with *m-cu* joining *M* nearer to *r-m* than the bend and with the last section of *Cu*₁ equal

in length to preceding section. [Antenna yellow-orange or reddish on second segment and base of third]..... **Hystericovoria** Townsend

[One species: *H. bakeri* Townsend, widespread, description in Curran (1938:6, as *Afrovororia munroi*).]

XI. Key to Afrotropical genera of Thelairini

[*Note.* The genera in this key both have plumose arista, bare eyes and parafacials, three *post dc* setae, and three pairs of scutellar marginal setae (of which the apicals are crossed and horizontal). The subgenus *Thrixionellus* Mesnil (genus *Prosheliomyia* Brauer & Bergenstamm) from Madagascar has not been seen but differs most notably from the two African genera by having the arista bare and a continuous row of marginal setae on abdominal T3.]

1. Wing vein R_1 bare. Eye occupying almost whole side of head, the genal depth less than width of third antennal segment (Fig. 42). ♂ frons with approximated parafrontals (interfrontal area very reduced to almost absent) and with uppermost pairs of frontal setae strongly proclinate (very conspicuously bent down in an opposite direction from the pair of reclinate orbital setae). ♀ with strong outwardly-directed prevertical setae and with outer vertical setae. Ocellar setae absent. Two *post ia* setae. Pre-alar seta absent or mere hair. Scutellum with short close almost entirely recumbent hairing and no discal setae; subapical scutellar setae extremely widely separated (distance between them twice that between a subapical and its corresponding basal seta) and inserted on slight 'corners' so that scutellar margin is not uniformly convex. Fore coxae bare on most of inner anterior surface. ♂ fore tarsi unusually small, last four segments together shorter than first segment and claws very small. Abdominal T1+2 without median marginal setae, T3 and T4 with median discal setae in ♀ but not in ♂. [Arista of ♂ bare on about apical two-fifths, that of ♀ plumose more or less on its full length. One *stpl* seta in ♂, two in ♀] **Allothelaira** Villeneuve

[One species: *A. diaphana* Villeneuve, West to East Africa, description in Villeneuve (1915:226).]

- Wing vein R_1 setulose. Eye smaller, genal depth as great as or greater than width of third antennal segment (Fig. 41). ♂ frons not so, interfrontal area well-developed and uppermost pairs of frontal setae not proclinate. ♀ without prevertical or outer vertical setae. Ocellar setae present (may be weak). Three *post ia* setae (first sometimes hair-like). Pre-alar seta present, small. Scutellum with rather sparse suberect hairing and with a pair of discal setae (recumbent); subapical setae separated by a distance less than twice that between a subapical and its corresponding basal seta, their insertions not prominent and hind margin of scutellum evenly rounded. Fore coxae with short close recumbent hair on inner surface (Fig. 140). ♂ fore tarsi not unusually small, last four segments together longer than first segment and claws large and conspicuous. Abdominal T1+2 with median marginal setae, T3 and T4 with median discal setae in both sexes

Thelaira Robineau-Desvoidy

[Three species: identification key in Emden (1960:373).]

XII. Key to Afrotropical genera of Microphthalmini

[Note. In the genera covered by this key the eyes are bare, the genal region exceptionally large (genal depth as great as or greater than eye height), the subfacial regions approximated so that the epistome is obliterated or reduced to a long narrow strip between face and mouth-opening, the postbuccal regions strongly swollen, and the second costal sector haired ventrally. There are always two sterno-pleural setae.]

1. Wing with a short or long M_2 appendix at the bend of vein M . Abdominal T1+2 excavate to its hind margin and without median marginal setae. Fore coxae with short fine recumbent hair on the whole anterior surface. Parafacials haired on the upper parts (hairing sometimes very short, fine and not immediately obvious). Pre-alar seta absent or minute (hair-like). Arista pubescent or with short bushy plumosity longer above than below. At least two *post ia* setae. Hind tibia with a *pv* apical seta 2
- Wing without trace of an M_2 appendix or fold at the bend of M . Abdominal T1+2 not excavate to its hind margin and with a pair of erect median marginal setae (set slightly forwards of extreme hind edge). Fore coxae bare on inner half of anterior surface (except apically). Parafacials bare. Pre-alar seta strong (at least as large as second *sa* seta). Arista with very long plumosity of equal length on upper and lower surfaces (Fig. 47). One *post ia* seta. Hind tibia without *pv* apical seta. [♀ with one pair of proclinate orbital setae. No *prst acr* setae. Three *post dc* setae. Wing cell R_5 open. Mid tibia with two *ad* setae. Hind tibia without *pd* preapical seta. Body colour reddish-yellow to more dingy reddish brown dorsally, except for very slender black tarsi]

Amesiomima Mesnil

[One species: *A. fulvella* Mesnil, Rwanda, description in Mesnil (1950a:5–6). Known only from ♀ holotype.]

2. Subfacial regions meeting in the mid-line below the facial hollow so that there is no epistomal strip between the facial region and the mouth-opening (Fig. 80). Presutural *acr* setae absent. Arista with short inconspicuous pubescence, the hairs not longer than basal diameter of arista (Fig. 46). Mid tibia with two *ad* setae. ♀ with one pair of proclinate orbital setae. [Humeral callus with not more than three strong setae. Three *post dc* setae. Hind tibia without *pd* preapical seta. Wing cell R_5 with very short petiole or closed just at wing edge. ♀ with or without a pair of erect median marginal setae on abdominal T3] **Cyrtocladia** Emden

[One species: *C. unisetosa* Emden, East Africa, description in Emden (1960:668–670). In Catalogue (Crosskey 1980:840) Angola was cited as a locality for this species, but examination of the ♀ specimen (BMNH) on which this record is based suggests that it belongs to an undescribed species: it differs from the above characterisation by having cell R_5 well open, vein R_1 setulose in its middle part, an extremely strong costal spine and two pairs of proclinate orbital setae.]

- Subfacial regions strongly approximated but not meeting in the mid-line, a distinct epistomal strip therefore connecting between the deep facial hollow and the mouth-opening (this epistomal strip as wide or nearly as wide as third antennal segment). Presutural *acr* setae present (two or three small but distinct pairs). Arista with conspicuous pubescence (longest hairs longer than basal diameter of arista) or with short plumosity. Mid tibia with three or four *ad* setae (a definite *ad* present basad of the main two and sometimes additionally a small *ad* distad of the main two). ♀ with two pairs of proclinate

orbital setae. [Humeral callus with at least three and often up to six differentiated setae. Three or four *post dc* setae. Hind tibia with or without *pd* preapical seta. Wing cell *R*₅ open or petiolate. Presutural *ia* seta present or absent. Scutellum sometimes with a pair of short fine lateral setae differentiated] **Microphthalma** Macquart

[Four species: no useful identification key; revision needed. Probably some undescribed species.]

XIII. Key to Afrotropical genera of Eloceriini, Macquartiini and Loewiini

[Note. The genera contained in this key are superficially dissimilar but it is convenient to treat them together in the one key as the tribes to which they are assigned are usually classified near together. The placement of *Trixoclea* in the Loewiini by Mesnil (1973b:1204) is accepted but requires confirmation.]

1. Arista thickened only at the base and its basal segments not elongate; third antennal segment not mucronate at its outer apex. Wing vein *M* complete and with a bend as normal; vein *R*₄₊₅ bare or with a few setulae confined to basal node. 3 + 3 or 3 + 4 *dc* setae. Parafacials haired (except virtually bare in *Chyluella*) 2
- Arista thickened on almost all its length and with the two basal segments much elongated; third antennal segment with its outer tip produced into a conspicuous sharp point (mucronate), the segment slightly axe-shaped in profile (Fig. 45). Wing vein *M* incomplete, stopping where bend would normally be; vein *R*₄₊₅ setulose from the node to *r-m*. 2 + 3 *dc* setae. Parafacials bare (very narrow and scarcely visible medially in profile). [Head shape subtriangular (Fig. 45). Eyes bare. Genae and postbuccae with long stiff black setulae. Two humeral setae. 0 + 3 *ia* setae. Two *stpl* setae. Pteropleural seta well developed. Scutellum with strong basal and subapical setae (latter cruciate) but without apical setae, one pair of weak laterals. Mid tibia with two *ad* setae. Wing with *m-cu* meeting *M* unusually close to *r-m* and with last section of *Cu*₁ twice as long as *m-cu*. Abdomen with T1+2 excavate to hind margin and T3 and T4 with median discal setae] **Trichactia** Stein
2. Eyes bare. Wing cell *R*₅ petiolate, the petiole conspicuous and about twice as long as *r-m*; bend of vein *M* with a long *M*₂ appendix that is subequal in length to the petiole. Scutellum with at least five pairs of marginal setae. Mid tibia with three or more *ad* setae. Four or five humeral setae. Body colour bright metallic green, blue-green, coppery-violet or violet; antennae very short and entirely bright orange. [♂ head without reclinate or proclinate orbital setae, eyes not very strongly approximated (Fig. 83); ♀ head with two pairs of upper orbital setae (stronger pair directed more or less backwards, weaker lower pair directed outwards) and about three pairs of proclinate orbital setae. Parafacial vestiture of ♀ largely setiform. Palpi short and filiform. 3 + 4 *dc* setae. 1 + 3 *ia* setae. Three *stpl* setae. Two pre-alar setae on each side (anterior one very long). Abdominal T1+2 not fully excavate to hind margin, T3 and T4 without discal setae. Wing veins yellow basally, basica yellow. Legs black] **Trixoclea** Villeneuve

[One species: *T. metallica* Villeneuve, South Africa, description in Villeneuve (1916b:497-498).]

- Eyes haired (except *Chyuluella* and an unrecognised species). Wing cell *R*₅ open or if just closed then virtually no petiole; bend of vein *M* without appendix or at most with a very short inconspicuous stub (some *Macquartia*). Scutellum with not more than three pairs of marginal setae. Mid tibia with fewer than three *ad* setae. Two or three humeral setae. If body colour metallic green to violaceous then antennae very long and darkened apically 3
- 3. Antennae very small, not nearly reaching to level of the vibrissae and third segment not more than one and a half times as long as second segment. Mid tibia with two *ad* setae. Scutellum with three pairs of marginal setae which include a pair of very strong crossed subhorizontal apicals. Three humeral setae (standing in line). Presutural *ia* seta absent. Body ground colour black; parafrontals, parafacials and genal dilations pollinose 4
- Antennae long and narrow with the first segments jutting prominently upwards (Figs 43–44), apices reaching almost to level of the vibrissae and third segment about three times as long as second segment. Mid tibia with one *ad* seta. Scutellum with two or three pairs of marginal setae, if three then apicals absent. Two humeral setae. Presutural *ia* seta present (1 + 3 *ia*). Body colour largely or entirely metallic dark greenish blue to violaceous; parafrontals, upper ends of parafacials and genal dilations polished and shining (non-pollinose). [Vibrissae inserted not far above level of mouth-opening. Palpi yellow. Four *post dc* setae. Two *stpl* setae. Wings clear with veins yellow basally; *m-cu* meeting *M* about mid-way between *r-m* and the bend, latter forming an evenly rounded curve. Lower calyptrae small and subcircular, glassy-white. Abdomen elongate-subovate, T1+2 not excavate to its hind margin, T3 and T4 without discal setae] 5
- 4. Eyes conspicuously hairy. Wings with *m-cu* meeting *M* nearer to the bend than to *r-m*, the bend forming an abrupt angle and the apical section of *M* distinctly inflexed immediately after the bend. Abdominal T1+2 excavate to its hind margin or virtually so and without median marginal setae; at least T4 and usually also T3 with median discal setae. Three *post ia* setae. Pre-alar seta weak, about half as long as first *post dc* seta. Lower calyptrae broad posteriorly, inner apical margins close to scutellum. [Three or four *post dc* setae. Two or three *stpl* setae. Legs either all brownish-black or mainly reddish-yellow] **Macquartia** Robineau-Desvoidy
[Seven species: identification key in Emden (1960:325).]
- Eyes more or less bare (some minute hairs visible under high magnification). Wings with *m-cu* meeting *M* mid-way between *r-m* and the bend, the bend forming a gentle even curve and last section of *M* not inflexed. Abdominal T1+2 not excavate to its hind margin and with a pair of median marginal setae; T3 and T4 without median discal setae. Two *post ia* setae (both strong and anterior one inserted nearer to transverse suture than to posterior one). Pre-alar seta moderately strong, nearly as long as first *post dc* seta. Lower calyptrae small and rounded, remote from scutellum. [δ eyes very strongly approximated (head nearly holoptic) and parafacials with very long dense

hair as in *Macquartia*. Three *post dc* setae. Two *stpl* setae. Pteropleural seta virtually undifferentiated] Undescribed species (? *Macquartia*)

[Running out here are two ♂ specimens (BMNH) from Cape Province, South Africa, that appear to represent an undescribed species with the facies of *Macquartia* but differing by the key characters indicated.]

5. Abdomen uniformly metallic dark greenish blue or blue-violet. Eyes haired. Parafacials fully haired (♂) or haired on upper anterior parts (♀); parafacials polished and shining on upper ends but not medially, without oblique transverse groove. Scutellum with three pairs of marginal setae (basals, laterals and subapicals). Legs brownish black. [Head profile as in Fig. 43]. . . .

Porphyromus Emden

[One species: *P. caeruleiventris* Emden, Kenya, description in Emden (1960:323–324).]

- Abdomen extensively pale greyish yellow pollinose, but pollinosity forming a remarkable net-like pattern over most of the surface and not present on large subcircular black dots around the base of each hair (the close and irregular black-spotted appearance unique amongst Afrotropical Tachinidae) (Fig. 131). Eyes bare. Parafacials almost completely bare (a few *very minute* hairs on the bulbous and shining uppermost ends of parafacials); parafacials swollen and shining medially, the medial swollen area separated from the shining upper end by an oblique pale-pollinose transverse groove (head profile Fig. 44). Scutellum with two pairs of marginal setae (basals and subapicals). Legs yellow **Chyuluella** Emden

[One species: *C. cribrata* Emden, Kenya, description in Emden (1960:321–323). In the Catalogue (Crosskey 1980:881) this genus was left tribally unplaced. Closer study for these keys indicates that Emden was right to associate *Chyuluella* with *Porphyromus* and I agree with his view. Whether the two genera correctly associate with *Macquartia* is questionable.]

XIV. Key to genera of Minthoini in tropical and southern Africa

[Note. The genera included in this key all have bare eyes, bare parafacials, bare propleura, three *post dc* setae, no *prst ia* seta, and not more than three pairs of scutellar marginal setae (of which the apicals are crossed and horizontal).]

1. Proboscis subelongate, the mentum subequal in length to head height. Epistome very prominent and well visible in profile. Prosternum with a strong seta on each side. [Arista bare. Three *post ia* setae. Wing with costal spine and with cell *R*₅ closed just before margin, bend of vein *M* obtuse and without appendix. Abdominal tergites with median discal setae].

Sarrorhina Villeneuve¹

[One species: *S. pupilla* Villeneuve, South Africa, description in Villeneuve (1936:2–3).]

- Proboscis short, mentum very much shorter than head height. Epistome not or hardly at all prominent, virtually invisible in profile. Prosternum bare (except in *Tipulidomima*). 2
- 2. Prosternum setulose. Posteroventral declivity of the thorax forming a fully sclerotised postcoxal bridge between abdominal base and hind coxae (as in

¹ Because of its prominent epistome this genus was placed by Emden (1960) in Leskiini. It has been catalogued (Crosskey 1980) and is here treated in Minthoini in accordance with the placement by Mesnil (1973a:1157). The spelling *Sarrhorina* in the catalogue (p. 842) is a typographical error and should be corrected to *Sarrorhina*.

Cylindromyia). Palpi minute, virtually absent. ♂ abdomen without median discal setae on any tergite. Wing with basal node of R_{4+5} bare. [♂ head almost holoptic, interfrontal area obliterated by meeting parafrontals. Arista pubescent. Two *post ia* setae. One *stpl* seta (? two in ♀). Scutellum with apical pair of setae hair-like. Wing cell R_5 open, bend of M a gentle curve without appendix. ♂ mid tibia without differentiated *ad* setae. Legs and wings extremely long, abdomen clavate; wings yellowed basally and smoky pale brown apically, darkened to deeper brown antero-apically; abdomen bicolorous, mainly yellow on T1+2 and T3 and contrastingly black on the remainder] **Tipulidomima** Townsend

[One species: *T. tessmanni* Townsend, Equatorial Guinea, description in Townsend (1933:458). Known only from ♂ holotype.]

- Prosternum bare. Posteroventral declivity of the thorax not so, either sunken and membranous medially or at most very lightly sclerotised in the mid-part and paler there than at sides. Palpi well developed. ♀ abdomen with median discal setae on T5 and nearly always also on T3 and T4. Wing with setulae on basal node of R_{4+5} 3
- 3. Wing cell R_5 petiolate, the petiole conspicuously longer than *r-m*. [Arista micropubescent. Two *post ia* setae. Two humeral setae. Abdomen with median marginal setae on T1+2 and with median discal setae on T3–T5]

Minthodes Brauer & Bergenstamm

[One species: *M. rhodesiana* Villeneuve, Zimbabwe, description in Villeneuve (1942:54–55).]

- Wing cell R_5 either not petiolate or with very short petiole not nearly as long as *r-m*. 4
- 4. Thoracic ground colour yellow (darkened to red-brown only on mid-dorsum). Hind tibia with three strong dorsal preapical setae (*pd* present that is subequal in size to the *d* and *ad*). Scutellum without basal setae or these indicated only by long fine hairs. Pre-alar seta very strong (subequal in size to largest humeral seta). Fore tarsi unmodified. [Antennae very long, arista micropubescent. Head profile as in Fig. 53. Two *post ia* setae. Two *stpl* setae. Wing vein M with bend a gentle curve without appendix. Abdominal T1+2 not excavate to its margin. Legs yellow. Abdomen subfusiform, broadly yellow on flanks of T1+2–T4, red-brown to black on mid-line of these tergites and on T5] **Pseudominthodes** Townsend

[One species: *P. scutellaris* Townsend, South Africa, description in Townsend (1933:455–456).]

- Thoracic ground colour black or virtually so. Hind tibia with two strong dorsal preapical setae (*pd* preapical absent or minute). Scutellum with distinct basal setae. Pre-alar seta absent or very small. Fore tarsi at least in ♀ enlarged, either laterally compressed along the length or widened on apical segments, much of the plantar surface almost bare 5
- 5. Wing with a long conspicuous M_2 appendix at the bend of vein M and with the base of R_{4+5} finely haired from the node for at least half way to *r-m*. Fore tarsi of ♂ and ♀ laterally compressed and with minuscule claws. Arista pubescent but not obviously plumose (main hairs not noticeably longer than width of thickened aristal base). Two humeral setae. Pre-alar seta absent.

[Usually one *post ia* seta, 0–2 occurring. One or two *stpl* setae. Wing cell R_5 closed exactly at or only just before margin. Abdominal T1+2 not excavate to its margin and with or without median marginal setae, T3–T5 with median discal setae] **Mintho** Robineau-Desvoidy

[Three species: identification key in Emden (1960:380).]

- Wing without an M_2 appendix at the bend (rarely a minute stump if bend sharp) and with the basal setulae of R_{4+5} virtually confined to the node. Fore tarsi of ♂ not laterally compressed and with minute claws (except in *Sumpigaster tarsalis*), ♂ claws usually very long, fore tarsi of ♀ either laterally or dorsoventrally widened. Arista plumose or subplumose. Two or three humeral setae. Pre-alar seta either absent or present but small 6

- 6. Wing with bend of vein M abrupt, forming a right angle or even a sharp angle slightly less than 90° . Scutellum with very strong basal setae that are much larger than the apicals. Usually 0–2 *post ia* setae (if three detectable then first two at least hair-like). Abdominal T1+2 not excavate to its hind margin and with or without median marginal setae. Setulae of basal node of R_{4+5} hair-like. Palpi yellow or tawny yellow and legs usually reddish yellow at least basally on femora. [Fore tarsi non-compressed and with enormous claws in ♂, laterally compressed with minute claws in ♀] **Sumpigaster** Macquart (except *tarsalis*)

[Four species: identification key in Emden (1960:377–379, as *Synhypostena*, *Dyshypostena* and *Megistodexia* collectively).]

- Wing with bend of vein M forming a gentle obtuse curve. Scutellum with weak basal setae that are smaller than the apical setae or at most nearly subequal to them. Three *post ia* setae. Abdominal T1+2 excavate to its hind margin and without median marginal setae. Setulae of basal node of R_{4+5} strong and conspicuous (one sometimes enlarged compared to others). Palpi dark brown or black and legs all black 7

- 7. Fore tarsi of both sexes strongly laterally compressed and with minute very inconspicuous claws. Interfrontal area of frons narrower than a parafrontal; ♂ with upper parafrontals and ocellar triangle brilliantly shining and non-pollinose '*Sumpigaster*' *tarsalis* Villeneuve¹

[Type-species of *Dyshypostena*, currently in synonymy with *Sumpigaster*, description in Villeneuve (1939:4–5).]

- Fore tarsi of ♂ of normal undilated form and with moderately or very long claws, fore tarsi of ♀ not laterally compressed but widened from side to side on last few segments. Interfrontal area of frons much wider than a parafrontal; ♂ with upper parafrontals and ocellar triangle dull pollinose. [Head profile as in Fig. 52] **Kinangopana** Emden¹

[One species: *K. edwardsi* Emden, Kenya, description in Emden (1960:331–332).]

¹ The genus *Kinangopana* was described by Emden (1960) in Macquartiini but undoubtedly belongs in Minthoini. Its only species is very similar to, and should probably be considered congeneric with, '*Sumpigaster*' *tarsalis*, which has almost identical male genitalia. If the two are treated in future as congeneric, then *Dyshypostena* will need to be recovered from synonymy with *Sumpigaster* and the name *Kinangopana* sunk as a synonym of *Dyshypostena*. Pending revision, the synonymy of *Dyshypostena* with *Sumpigaster* established by Mesnil (1973a:1162) is accepted.

XV. Key to Afrotropical genera of Nemoraeni

[*Note.* This small tribe is monogeneric in the Afrotropical region, containing only *Nemoraea*, of which *Chaetolydella* Villeneuve (treated as a valid monotypic genus by Emden 1960) is considered a synonym. There is a possibility, however, that the affinities of *Bracheliopsis*, which remains in the Ernestiini where it was placed when first described (Emden 1960), lie with *Nemoraea* rather than *Brachelia*. The genus *Bracheliopsis* is therefore included primarily in the Ernestiini key (p. 256) but is also included here in order to compare its characters with those of *Nemoraea*. The nemoraene features of *Bracheliopsis* include most notably the presence of some soft, fine hair on the outer and upper edge of the lower calypter, the virtually non-projecting epistome, and the presence of definite setae on the upper anterior part of the genal dilation. Both genera in the key have haired eyes (hairing long but sometimes sparse in *Nemoraea*), a supernumerary weak supra-alar seta between the normal first and second strong *sa* setae (this supernumerary sometimes hair-like in *Bracheliopsis*), and no median marginal setae on abdominal T1+2.]

1. Arista normal, thickened only at the base and its second segment not elongate. Scutellum with the lateral pair of setae very strong, as large as or larger than the basals and often as large as the subapicals (occasionally a second pair of laterals present). Palpi dorsoventrally flattened and widest near the middle (upper surface rather uniformly covered with short, stubby, recumbent hairs). Wing vein *M* with a long appendix or fold at the bend. Fore tibia with a weak and inconspicuous *ad* preapical seta (weaker than the *d* preapical). [3 + 3 or 3 + 4 *dc* setae. Two or three *stpl* setae. Second costal sector bare or haired ventrally. Lower calypter with fine soft hair on dorsal surface present either over the whole surface or confined to outer edge. Head of ♂ with or without proclinate orbital and prevertical setae (nearly always without)] **Nemoraea** Robineau-Desvoidy

[Twelve species: incomplete identification key in Emden (1960:360–361). Four additional species in Madagascar, to which key in Mesnil (1978:107–108, as *Hypotachina*). *Hypotachina* Brauer & Bergenstamm not accepted as valid genus and considered synonymous with *Nemoraea* in Crosskey (1980:843).]

- Arista thickened on most of its length and its second segment conspicuously elongate (about 3–6 times as long as its width) (Fig. 55). Scutellum with the lateral pair of setae very weak and inconspicuous, much weaker than the basal setae and also much weaker than the rather strong apicals (Fig. 120). Palpi normal, not dorsoventrally flattened and widest near the tips. Wing vein *M* with very sharp bend but the bend without or with only a very short appendix or fold (Fig. 101). Fore tibia with a strong and conspicuous *ad* preapical seta (stronger than the *d* preapical). [3 + 4 *dc* setae. Two *stpl* setae. Second costal sector bare ventrally. Lower calypter with fine soft hair of dorsal surface confined to extreme outer rim. Head of ♂ with proclinate orbital and prevertical setae (as in ♀)]

[*Bracheliopsis* Emden (see Ernestiini)]

[One species: *B. geniseta* Emden, Kenya, description in Emden (1960:405–407).]

XVI. Key to Afrotropical genera of Leskiini

[*Note.* The genera included in this key all have bare eyes and parafacials, bare propleuron, no *prst ia* seta and three *post dc* setae. The genus *Cyanoleskia* from Madagascar has not been seen but its one species differs from all mainland African leskiines by the unusual blue to blue-violet body colour.]

1. Wing cell *R*₅ with a long petiole (the petiole almost as long as *m-cu*). Arista thickened on at least two-thirds of its length and with its second segment greatly elongate (3–5 times as long as its width). [Frons broad and with proclinate orbital setae in ♂ as well as ♀; interfrontal area clear yellow or

orange. Antennae long and heavy, virtually reaching epistome (head profile as in Fig. 51). Scutellum with subapical setae parallel and apical pair of setae minute, crossed and directed half-upwards. Abdomen with large paired tawny brown to blackish brown triangles or subquadrate marks extending forwards from hind margins of T3–T5; T1+2 excavate to its hind margin; no abdominal discal setae and T1+2 and T3 without marginal setae]

Istoglossa Rondani

[One species: *I. aurantiaca* Mesnil, Senegal, description in Mesnil (1973a:1127).]

- Wing cell R_5 non-petiolate, open or at most just closed at margin. Arista thickened on less than half its length and with its second segment not noticeably elongated 2
- 2. Prosternum strongly haired (Fig. 135). Wing with one setula (usually very strong) on basal node of R_{4+5} . Two *post ia* setae. [Proboscis usually long and slender, exceeding head height (head profile as in Fig. 50). Palpi long and fili-form. Ocellar setae weak or absent. Three *stpl* setae. Scutellum with all three pairs of marginal setae well developed. Second costal sector bare ventrally. Mid tibia with two *ad* setae (proximal one much stronger than distal one). Hind tibia with three dorsal preapical setae. Abdominal T1+2 not excavate to its hind margin and with median marginal setae. ♂ head with eyes strongly approximated, no proclinate orbital or prevertical setae and with parallel inner vertical setae; ♀ head with two pairs of proclinate orbital setae, a pair of enormous outwardly directed prevertical setae, very strong outer vertical setae and with crossed inner vertical setae; vibrissae very strong in both sexes and level with prominent epistome. Abdomen elongate-subfusiform, mainly reddish-yellow with narrow dark midline and tergite hind margins in ♂, black with silvery grey pollinose fasciae in ♀ (♀ superficially like *Ocypteromima*). Wings pale smoky brown, especially anteriorly] **Oxymedoria** Villeneuve
 [One species: *O. palpata* Villeneuve, Nigeria, description with head figure in Villeneuve (1916b:505–506). Probably some undescribed species (♀ specimen in BMNH differs from ♀ holotype by having short proboscis and no median discal setae on abdominal T3 and T4, ♂ from Zaïre differs from *palpata* ♂ from Nigeria in having more pointed and extensively reddish-yellow abdomen (but both males with discal setae on T3 and T4 and proboscis of same long, slender form).]
- Prosternum bare. Wing with two or more small setulae or minute hairs on basal node of R_{4+5} , sometimes with setulae extending along the vein towards *r-m*. Two or three *post ia* setae 3
- 3. Two strong *post ia* setae. Genal region of the head large, in profile its depth subequal to length of antenna, and with a large, haired genal dilation. Abdominal T1+2 excavate to its hind margin. Second costal sector bare ventrally. Vibrissae inserted at a level far above the prominent epistome. Humeral callus with three setae standing in line. [Robust forms with broadly subovate abdomen. ♀ head with parallel inner vertical setae, no outer vertical setae, and with a pair of small, outwardly directed prevertical setae. Scutellum with three pairs of subequally large marginal setae and a pair of small, semi-recumbent discals. Hind tibia without *pd* preapical seta] 4
- Three *post ia* setae (first occasionally very small). Genal region of head not very large, in profile its depth much less than antennal length, genal dilation

virtually undeveloped or (*Ocypteromima*) forming a narrow haired strip beneath the eye. Abdominal T1+2 not excavate to its hind margin (except in *Cololeskia*). Second costal sector haired ventrally. Vibrissae inserted about level with the epistomal margin or above it by a distance only about equal to width of third antennal segment. Humeral setae varied, if three in basal line then usually a fourth seta set forwards 5

4. Three *prst dc* setae. Abdomen without median discal setae on any tergite. Fore tibia with one *pv* seta. Mentum of proboscis about as long as eye height or more. Basicosta orange-yellow. [Mid tibia without a submedian *v* seta and with one *ad* seta] **Subfischeria** Villeneuve¹

[One species: *S. flavogrisea* Villeneuve, southern Africa, description with head profile figure in Villeneuve (1937:210–212).]

- Two *prst dc* setae. Abdomen with median discal setae on T3–T5. Fore tibia with two small *pv* setae. Mentum of proboscis much shorter than eye height. Basicosta brownish black. [δ eyes strongly approximated, frons at narrowest point not more than four times as wide as anterior ocellus. Abdomen with light tawny-orange ground colour except for blackish brown median vitta, colour overlaid by pale greyish-yellow pollinosity which appears chequered and shifting with direction of light. Head profile as in Fig. 49]

Stomina Robineau-Desvoidy¹

[One species (presumed undescribed): running here is one δ specimen (BMNH) from Namibia belonging to *Stomina*. Probably conspecific with η from South Africa seen by Mesnil¹.]

5. Abdominal T1+2 excavate to its hind margin. Acrostichal setae 2+3. Epistome not projecting and invisible in profile (Fig. 48). Abdominal T3 without strong erect median marginal setae (at most with a pair of indefinite recumbent marginals somewhat larger than other marginal hairing). Thorax with yellowish-white hair on pleural regions. [Two *stpl* setae. Scutellum with a pair of short, fine, lateral setae between basals and subapicals that are a little weaker than the small apicals, thus four pairs of marginals. Vibrissae exactly level with epistomal margin. Mid tibia with two *ad* setae]

Cololeskia Villeneuve

[One species: *C. pallida* Villeneuve, Zimbabwe, description in Villeneuve (1939:2–3). A δ from Kenya and a η from Senegal (BMNH) are congeneric and may belong to *pallida*. The η has strongly clubbed palpi.]

- Abdominal T1+2 not excavate to its hind margin. Acrostichal setae usually 1+1, occasionally a second small *acr* either presuturally or postsuturally. Epistome projecting and usually visible in front of vibrissal insertions. Abdominal T3 with erect median marginal setae (except in a few *Leskia* species). Thorax with dark pleural hair (except *L. pallidithorax*) 6
6. Two *stpl* setae. Mid tibia with two or more *ad* setae. Scutellum with two pairs of setae, basals and subapicals. Lower calyptae with unusually wide and swollen margins, these conspicuously opaque creamy white or creamy yellow

¹ The genus *Subfischeria* is treated in Leskiini (see also Crosskey 1980) in accordance with its placement by Emden (1960). Its characters ally it to *Stomina* of the Palaearctic region and separate generic status is only doubtfully warranted. Mesnil (1975a) recognises a tribe Stominini for these two genera alone, and has (op. cit., p. 1329) reported seeing a specimen of *Stomina* from Pretoria (record concealed in the *Fliegen der Palaarktischen Region* work and overlooked during preparation of Afrotropical tachinid catalogue).

and with almost invisible fringes. ♀ without outer vertical setae. Hind tibia with three dorsal preapical setae (*pd* well developed in addition to *d* and *ad*). Body and legs black, abdomen fusiform in both sexes and with pale-pollinose fasciae **Ocypteromima** Townsend

[Three species: identification key in Emden (1960:400).]

- Three *stpl* setae. Mid tibia with one *ad* seta. Scutellum usually with apical and discal setae in addition to basals and subapicals, sometimes with laterals if apicals missing (seldom without at least one pair additional to basals and subapicals). Lower calyptae normal, margins narrow and semi-translucent, hair-fringes distinct. ♀ with outer vertical setae. Hind tibia with two dorsal preapical setae (*pd* absent or extremely weak). Body and legs not so, abdomen largely tawny or reddish yellow (often with dark median vitta) and legs largely reddish yellow, abdomen not distinctly fusiform (in ♂ elongate-subconical). [Arista sometimes plumose. Proboscis sometimes very long and slender. Two or three *prst dc* setae] **Leskia** Robineau-Desvoidy

[Eleven species: identification key in Emden (1960:387–389). Three additional species in Madagascar for which key in Mesnil (1978:108–110).]

XVII. Key to Afrotropical genera of Ernestiini

[Note. It is not certain that Emden's (1960) assignment of the genus *Bracheliopsis* to a position in Ernestiini near *Brachelia* is correct as the genus does not have a specially *Brachelia*-like facies and shares many features with *Nemoraea* s.l. For present purposes *Bracheliopsis* is retained in Ernestiini, but is included also in key XV to *Nemoraeini*, q.v.]

1. Two *stpl* setae. Four *post dc* setae. Three *prst acr* setae. Antennae long (Fig. 55), third segment at least 3.5 times as long as second segment; arista thickened on much of its length and with the second segment 3–5 times as long as wide. Wing cell *R*₅ open and bend of vein *M* usually without a definite appendix (Fig. 101). Abdominal T3 without discal setae. Lateral scutellar setae very small (sometimes nearly hair-like) and much weaker than apical scutellar setae. Genal dilation on its anterior edge with a group of strong, forwardly directed setae. Lower calypter with some long soft pale hair on the upper surface of the outer margin (additional to fringe hair). ♂ head with non-approximated eyes and with two pairs of proclinate orbital and one pair of prevertical setae (as in ♀) **Bracheliopsis** Emden
[One species: *B. geniseta* Emden, Kenya, description in Emden (1960:405–407).]
- Three *stpl* setae. Three *post dc* setae. Two *prst acr* setae. Antennae short (Fig. 57), third segment not or only slightly longer than second segment; arista thickened on less than half its length and with non-elongate second segment. Wing cell *R*₅ usually closed in wing margin or short-petiolate and bend of vein *M* with a well-developed appendix. Abdominal T3 with discal setae. Lateral scutellar setae about as strong as the apical scutellar setae. Genal dilation without such a group of strong anterior setae, if a few setae distinct then these along the lower margin near the peristomal setae. Lower calypter without such hair on the upper surface of the outer margin (with only the usual fringe hair). ♂ head with eyes strongly approximated and without either proclinate orbital or prevertical setae . . . **Brachelia** Robineau-Desvoidy
[Three species: key to two species in Emden (1960:403).]

XVIII. Key to Afrotropical genera of *Linnaemyini*

1. Wing with cell R_5 closed and long-petiolate (eg. as Fig. 103). Arista with both basal segments strongly elongate (eg. as Fig. 54). Palpi completely absent. Proboscis slender and longer than head. ♂ with proclinate orbital setae 2
- Wing with cell R_5 open or just closed at the margin. Arista at most with only the second segment elongate. Palpi present though very small papilliform or filiform. Proboscis long or short. ♂ almost always without proclinate orbital setae 3
2. Eyes bare. Scutellum with the subapical and basal pairs of setae exceptionally weak and inconspicuous and much smaller than the lateral and apical setae (which are enormous and form the only conspicuous marginal setae). Parafacials with a row of strong hairs up their height. Wing vein R_{4+5} with setulae not extending beyond *r-m*. Intermediate abdominal tergites without discal setae **Marshallomyia** Emden
[One species: *M. natalensis* Emden, South Africa, description in Emden (1960:465–467).]
- Eyes haired. Scutellum normal, with strong subapical and basal pairs of setae which are larger than the lateral and apical setae. Parafacials bare. Wing vein R_{4+5} setulose to a point far beyond *r-m*. Intermediate abdominal tergites with discal setae **Gymnoglossa** Mik
[One species: *G. munroi* Curran, South Africa, description in Curran (1934b:25).]
3. Eyes with very short, sparse hairing. Wing vein *M* without an M_2 appendix or at most with a very short inconspicuous stub-like extension at the bend (Fig. 102); vein R_{4+5} setulose to well beyond *r-m*. 2 + 3 *dc* setae. Acrostichal setae almost entirely undifferentiated, only the prescutellar pair well developed. Two *stpl* setae. Subapical scutellar setae converging and crossing at their tips; apical scutellar setae virtually absent, represented by a pair of crossed hairs. Wings with a pattern formed by smoky brown cross-bands in an apical and submedian position (Fig. 102). Thoracic dorsum with a very bold sharply defined colour pattern: humeral calli, extreme sides of prescutum, notopleura, supra-alar regions of scutum, a postero-submedian spot on the scutum, and most of the scutellum ivory-coloured; prescutum (except sides), scutum (except supra-alar regions and the pale spot) and an anteromedian triangular area of the scutellum dark red-brown; both pale and dark areas subshining and devoid of pollinosity. Abdomen with suture between T3 and T4 obsolescent **Schizolinnaea** Emden
[One species: *S. mirabilis* Emden, east-central Africa, description in Emden (1960:408–409).]
- Eyes with long, dense and conspicuous hairing. Wing vein *M* with a long M_2 appendix; vein R_{4+5} not setulose beyond *r-m*. 3 + 3 *dc* setae. Acrostichal setae very well differentiated, usually 3 + 4 pairs. Three *stpl* setae (aberrantly two in occasional specimen). Subapical scutellar setae subparallel or slightly divergent; apicals not hair-like, moderately to very strongly developed setae. Wings without such double cross-band pattern, usually without definite pattern but dark brown medially and yellow basally in a few species of *Linnaemya*. Thoracic dorsum without such colour pattern. Abdomen with suture distinct between T3 and T4. 4

4. Parafacials with long bristly hairs on their whole height [head figure in Villeneuve, 1916b:474] **Plagiocoma** Villeneuve
[One species: *P. crassiseta* Villeneuve, South Africa, description in Villeneuve (1916b:474–475) with additional data in Townsend (1939:247). Known only from holotype.]
- Parafacials bare or at most with a few inconspicuous hairs at extreme upper end near frontal setae **Linnaemya** Robineau-Desvoidy
[Sixty species: identification key, almost complete, in Emden (1960:410–424).]

XIX. Key to Afrotropical genera of Tachinini

[Note. The genera included in this key all have bare eyes (cf. Linnaemyini) and usually a definite appendix-vein or fold extending from the bend of wing vein *M*. Setae on the humeral callus are unusually numerous (usually at least six), there are several *ad* setae on the mid tibia and a well-developed apical *pv* seta on the hind tibia. Except in *Platyschineria* the second antennal segment is unusually long and the third segment normally not longer than the second (except in *Chromatophania*). The hind coxa has soft hair on the outer part of the posterodorsal surface (except in *Platyschineria*). The genus *Platyschineria* was tribally unplaced in an earlier work (Crosskey 1980:881) but detailed examination of the two available specimens (BMNH) for the present keys indicates affinity to *Chromatophania* and inclusion in Tachinini.]

1. Exceptionally spiny flies, abdomen with a transverse row of spine-like marginal setae on T1+2 and T3, and similar spine-like setae present on scutellum and abdominal sternites. Inner vertical setae cruciate. [Parafacials without setae but with long hair or fine straight long setulae. Ocellar setae present. ♂ with or without proclinate orbital setae. Propleuron haired. Palpi extraordinarily long and slender, extending very far beyond the strongly prominent epistome (Fig. 60). Hind tibia without *pd* preapical seta. Wings not patterned, sometimes uniformly dusky. Abdomen very bulbous]
Dejeania Robineau-Desvoidy
[Four species: identification key in Emden (1960:469). Emden recognised subspecies in *D. crocea* but confused the nomenclature because *hecate* has priority over *crocea* and is the valid name for nominate species/subspecies, not *crocea*.]
- Not exceptionally spiny flies, abdomen without transverse rows of spine-like setae on T1+2 or T3 and without spine-like modification of the vestiture on the scutellum and abdominal sternites (T1+2 always without any median marginal setae and T3 with one pair of normal non-spiniform median marginal setae, these occasionally undifferentiated). Inner vertical setae parallel (? *Platyschineria*, for which the two specimens seen imperfect) 2
2. Parafacials with strong, forwardly directed setae in addition to hairing (normally two such setae on lower end of each parafacial but a continuous row of four or more in *P. lithanthrax*). Propleuron bare. Ocellar setae absent. [Epistome strongly projecting. ♂ with two pairs of proclinate orbital setae. Uppermost pairs of frontal setae strong and reclinate. Hind tibia without *pd* preapical seta. Wings without colour pattern, colourless or virtually so] 3
- Parafacials without setae, only with fine hair either on their whole height or on uppermost half. Propleuron haired (except in *Platyschineria*). Ocellar setae present 4
3. Palpi fully developed, very long and slender (subequal in length to or longer than the antennae and surpassing the epistomal margin). Either three post *dc* setae (*P. mimica*) or four post *dc* setae **Peleteria** Robineau-Desvoidy
[Four species: identification key in Emden (1960:481–482, under variant spelling *Peletieria*).]

- Palpi virtually absent, represented by a pair of minute papillae no longer than the *first* antennal segment. Four *post dc* setae **Cuphocera** Macquart
[Two species: identification key in Emden (1960:485, with *javana* as *varia argyrocephala*).]
- 4. Epistome not strongly prominent, the facial profile nearly straight and with little trace of concavity between epistome and face (Figs 58–59); vibrissae inserted about level with epistomal margin. Antennae long, virtually reaching epistome and with third segment subparallel-sided in profile. Hind tibia with three dorsal preapical setae (*pd* seta present). ♂ with proclinate orbital setae (one or two pairs) 5
- Epistome strongly prominent, the facial profile with deep saddle-like concavity between epistome and face; vibrissae inserted well above level of epistomal margin. Antennae falling well short of epistomal margin, third segment shorter than second, slightly widening and rounded apically in profile. Hind tibia with two dorsal preapical setae (*pd* seta absent). ♂ without proclinate orbital setae. [Appearance distinctive: wings bicolorous, pale orange-yellow anterobasally and smoky brown on remainder; thoracic dorsum shining black and contrasting with tawny yellow basal two thirds of abdomen (abdominal apex and usually small median marks on anterior tergites dark brown or black). Parafacials covered with very long fine pale hair. Palpi short filiform (subequal in length to second antennal segment). Wing cell *R*₅ open. Dorso-central setae unusually variable, 2(3) *prst dc* and 3(4) *post dc*]

Paratachina Brauer & Bergenstamm

[Two species: identification key in Emden (1960:481). Status of *P. costae* described from Ethiopia (no other Ethiopian material apparently known) uncertain, and Jaennicke's type(s), presumed in Frankfurt, not seen by Emden or later worker.]

- 5. Propleuron haired. Hind coxa haired on posterodorsal surface. Parafacials not unusually wide (eg. as in Fig. 58), width at mid-point less than length of second antennal segment; with pale hair on their whole height. Arista thickened on about two-thirds of its length, first segment not elongate and last section much longer than second segment (normal). Palpi fully developed, usually clubbed, about as long as the short mentum-labellae together. Second *sa* seta weak or almost hair-like, shorter and finer than either *pra* or last *ia* seta. Wing cell *R*₅ open (except in unidentified specimen from Nigeria in BMNH with petiole at least as long as *r-m*). Abdomen with setae of T4 and T5 normal, long and strong. Wings with a broad irregular submedian brown cross-band and usually conspicuously yellow along the anterior veins basad of the dark cross-band **Chromatophania** Brauer & Bergenstamm

[Five species: identification key to three species in Emden (1960:477) and revision needed. *Chromatophania emdeni* and *C. versicolor* (neither seen) possibly synonymous, distinguished by uniformly black abdomen from species keyed in Emden. Specimen with petiolate wing cell *R*₅ (see above) probably representing an undescribed species.]

- Propleuron bare. Hind coxa bare on posterodorsal surface. Parafacials extremely broad (Fig. 59), almost as wide as eye and width at least twice as great as length of second antennal segment; with black hair on upper halves. Arista thickened on entire length, first segment and second segment both very elongate and last section shorter than the very long second segment (Fig. 59). Palpi small and filiform, much shorter than mentum. Second *sa* seta

strong, at least as large as *pra* or last *ia* seta. Wing cell *R*₅ petiolate, the petiole about as long as *r-m*. Abdomen strongly globose and setae of T4 and T5 scarcely differentiated, virtually absent on T5 and the marginals of T4 very small and stubby. Wings without cross-band, more or less uniformly pale yellowish brown. [Head extremely *Gonia*-like, with very wide frons and weak setae, antennae long and narrow with third segment at least four times as long as second (Fig. 59). Legs short and stout with exceptionally short tarsi]

Platyschineria Villeneuve¹

[One species: *P. cuthbertsoni* Villeneuve, South Africa, Tanzania and Zimbabwe, description in Villeneuve (1942:51–52). Previously recorded only from Zimbabwe. The ♂ holotype (not seen since description by any specialist) should be in Bulawayo Museum. Two specimens recently found in unnamed BMNH material are identified as this species and above-cited characters based on these specimens, data as follows: ♂, South Africa, Crocodile Bridge, Kruger N.P. ii.1969 (F. Zumpt); ♀, Tanzania, Shinyanga, 9.x.1958 (I. A. D. Robertson).]

XX. Key to Afrotropical genera of Acemyini

[Note. The genus *Atlantomyia*, the only genus of tachinid confined to St Helena island, is included.]

1. Three *stpl* setae. Wing vein *M* with a gently curving bend or if bend moderately sharp then *M* changing direction at a widely obtuse angle and apical section not at all inflexed soon after the bend (eg. as in Fig. 104). Usually three *prst dc* setae 2
- Two *stpl* setae. Wing vein *M* with bend distinctly abrupt, apical part of vein at least slightly inflexed soon after the bend. Two *prst dc* setae 3
2. Abdominal T1+2 not excavate to its hind margin and with a pair of median marginal setae. Frons with one pair of proclinate orbital setae in both sexes. Basicosta black. Palpi black. [Body and legs with all-black ground colour.]

Charitella Mesnil

[One species: *C. nigrescens* Mesnil, Malaŵi (also Madagascar), description in Mesnil (1977d:325–326).]

- Abdominal T1+2 excavate to its hind margin and without median marginal setae. Frons with multiple pairs (2–6) of proclinate orbital setae in both sexes. Basicosta tawny or orange-yellow (contrasting with black tegula). Palpi yellow **Metacemyia Herting**

[Three species: identification key in Crosskey (1973a:376).]

3. Head in facial view with inner eye margins strongly diverging ventrally and the parafacials hardly at all narrowing towards their lower ends (Fig. 120 in Crosskey 1977). Antennae short, not nearly reaching epistome, and with outer tip of third segment pointed ('mucronate'). Abdomen conspicuously pollinose on T3–T5 and sutures between intermediate tergites distinct. [Africa, Cape Verde Islands, Madagascar] **Ceracia Rondani**

[Two species: identification key for these (*africana* and *freyi*) in Palaearctic key of Mesnil (1962b:791, as *Myiothyria*). One additional species in Madagascar (Mesnil 1977d:326).]

- Head in facial view with inner eye margins not noticeably diverging ventrally (face subequal in width to frons) and the parafacials strongly narrowing

¹ Emden (1960:372) placed *Platyschineria* in Germariini on the basis of Villeneuve's statement in the original description that it showed some resemblance to *Germaria* Robineau-Desvoidy (Palaearctic). I think this incorrect and consider its phyletic relationship to lie with the genera of Tachinini that show a non-prominent epistome and long narrow antennae, viz. *Chromatophania* and *Schineria* Rondani. It agrees with *Schineria* in (unusually for Tachinini) lacking soft hair posterodorsally on the hind coxae.

towards their lower ends (Fig. 120 in Crosskey, 1977). Antennae long and heavy, virtually reaching to level of vibrissae and epistome, and non-mucronate. Abdomen shining black with obvious pollinosity confined to T5 and with tergites 3 and 4 fused in the mid-dorsal line. [St Helena only]

[**Atlantomyia** Crosskey]

[One species: *A. nitida* Crosskey, description in Crosskey (1977:147–150).]

XXI. Key to Afrotropical genera of Neaerini

1. Wing venation complete, vein *M* with a normal bend and complete to the wing edge (Fig. 106); *m-cu* present. Palpi absent. Prosternum bare. Four *post dc* setae. Abdominal T1+2 excavate to its hind margin or nearly so. Abdominal T3 without median marginal setae. Wing vein R_{4+5} with at least two small setulae on its basal node **Neoplectops** Malloch
[One species: *N. nudinerva* Mesnil, widespread, description in Mesnil (1956b:78, as *Pointellia*). In this species vein R_1 is completely bare: a specimen (in BMNH) from Principe island has a few minute setulae on this vein and may belong to a second species.]
- Wing venation incomplete, vein *M* without bend and its apical portion absent (Fig. 105); *m-cu* present or absent. Palpi present (strongly clubbed in ♀). Prosternum setulose. Three *post dc* setae. Abdominal T1+2 not excavate virtually to its hind margin. Abdominal T3 with a pair of erect median marginal setae. Wing vein R_{4+5} with a single isolated seta on its basal node 2
2. Wing with crossvein *m-cu* **Elfia** Robineau-Desvoidy
[One species: *E. aristalis*, South Africa, brief description in Villeneuve (1936:2–3), as *Phytomyzoneura*). Described from one specimen of unstated sex, apparently neither holotype nor any other specimen seen since description.]
- Wing without crossvein *m-cu* (Fig. 105) **Phytomyptera** Rondani
[Undescribed species: five specimens in BMNH (three from South Africa, one from Namibia, one from Yemen) belong to at least two and probably three undescribed or unrecognised species.]

XXII. Key to Afrotropical genera of Siphonini

[*Note.* The tachinids covered by this key are small species with short legs bearing rather short stiff setae, and with short broad wings in which the costal margin is conspicuously incised at the end of vein *Sc*. Other features are: head widely dichoptic with proclinate orbital and strong outer vertical setae in both sexes; three *stpl* setae; either or both wing veins R_1 and Cu_1 often with setulae; mid tibia with one *ad* seta and hind tibia with three dorsal preapical setae (*pd* present in addition to *d* and *ad*); abdominal T1+2 not excavate to its hind margin and tergites without discal setae; subapical scutellar setae convergent, enclosing the apicals (Fig. 119).]

1. Proboscis very long and slender, geniculate and capable of being ‘doubled back’ in the resting position, total length of mentum and the very long thin labellae much greater than head height (Fig. 65) **Siphona** Meigen
[Thirty-seven species: no available identification key. Some additional species in Madagascar and key to all known eight Madagascan species in Mesnil (1977b:75–80).]
- Proboscis not elongate and not geniculate, total length of mentum and the broad fleshy labellae much less than head height 2
2. Thorax on each side with two strong subequal prostigmatic setae, one directed upwards and the other downwards (Fig. 138)
Peribaea Robineau-Desvoidy
[Seventeen species: no available identification key. Some additional species in Madagascar (key in Mesnil 1977b:80–82) and one each in Mauritius and Seychelles.]

- Thorax on each side with only one strong prostigmatic seta, directed upwards 3
- 3. Sternopleuron with a regular row of fine hairs or setulae in front of the mid coxa (Fig. 137) **Actia** Robineau-Desvoidy
[Sixteen species: no available comprehensive key. Two additional species in Madagascar (key in Mesnil 1977b:83–84) and one each in Seychelles and Rodriguez.]
- Sternopleuron completely bare laterally in front of the mid coxa 4
- 4. Sternopleuron with the lowermost *stpl* seta long and strong, larger than or at least as large as the upper anterior *stpl* seta. Wing with vein Cu_2 (sixth vein) distinct to the wing edge **Ceranthia** Robineau-Desvoidy
[Four species: identification key in Mesnil (1954:22–24). One additional species in Madagascar (Mesnil 1977c:178).]
- Sternopleuron with the lowermost *stpl* seta weak, much shorter and finer than the upper anterior *stpl* seta. Wing with vein Cu_2 usually distinctly stopping before the wing edge **Ceromya** Robineau-Desvoidy
[Fourteen species: no available identification key. One additional species in Madagascar.]¹

XXIII. Key to genera of Blondeliini in tropical and southern Africa

- 1. Ocelli present. Legs and abdomen with strong setae. Wing with vein *M* complete to the wing margin (except in *Lindneriola*). Pre-alar and second *sa* setae present, at least two and usually three *post ia* setae 2
- Ocelli absent. Legs and abdomen without clearly differentiated setae. Wing with vein *M* incomplete (apical section from bend to wing margin missing, Fig. 109). Pre-alar and second *sa* setae absent, one *post ia* seta. [Head profile strongly triangular (Fig. 63) frons nearly horizontal and antennal axis almost level with top point of eye; face forming a deep antennal channel flanked by strongly prominent setulose facial ridges. Eyes bare. Arista thickened on much of its length. Mouthparts vestigial] **Latiginella** Villeneuve
[Two species: identification key, with wing figures, in Verbeke (1963:179).]
- 2. Four *post dc* setae. [3 + 3 *acr* setae. Mid tibia with one *ad* seta and with submedian *v* seta. Abdominal T1+2 excavate to its hind margin] 3
- Three *post dc* setae (except *Eophyllophila* with two). [Eyes bare, except occasionally short-haired in *Prosopofrontina*] 4
- 3. Eyes densely hairy. Facial ridges setose. Antennal axis conspicuously above level of eye middle and antennae correspondingly elongate. Gena haired, the dilation occupying whole area from peristomal setae to eye. ♀ abdomen with lower ends of T3 and T4 modified into a compressed mid-ventral 'keel' and ventral edges of these tergites armed with strong stubby spinules; ovipositor forming a sharp hook-like downwardly directed piercer (Fig. 127). [Wing venation as in Fig. 111]. **Compsilura** Bouché
[Two catalogued species but *solitaria* probably identical with *concinata*. Description of *concinata* in Mesnil (1962a:737–739).]

¹ Five Afrotropical species described by Mesnil (1954:24–28) in *Siphona* (*Asiphona*) and reassigned by Crosskey (1980:853) to *Ceromya* are among the fourteen species. Not all five have been seen, but it is likely that these five species should have been reassigned to *Ceranthia* rather than to *Ceromya* provided that both these nominal genera are considered valid. They are very closely allied, however, as the key characters above indicate; separate generic status is only doubtfully warranted.

- Eyes bare. Facial ridges bare. Antennal axis at or below level of eye middle and antennae correspondingly short. Gena bare except near peristomal setae, the dilation virtually absent. ♀ abdomen with unmodified tergites and without such ovipositor **Rioteria** Herting

[One species: *R. rufitibia* Mesnil, tropical Africa, description in Mesnil (1959:14–16, as *Tachinophytopsis*).]

- 4. Mid tibia without a submedian *v* seta. [Eyes bare. Two *prst dc* setae. Scutellum without apical setae. Mid tibia with one *ad* seta. Facial ridge bare. Propleuron bare] 6

- Mid tibia with a submedian *v* seta 7

- 5. Fore tibia with one *pv* seta. Scutellum without lateral setae (only basals and subapicals present). Genal depth (eye to peristome) about twice as great as width of third antennal segment. Hind tibia with a small *pd* preapical seta in addition to the usual *d* and *ad* preapicals. [Arista with long pubescence. Ocellar setae very strong. Basal node of *R*₄₊₅ with one unusually strong setula (about twice as long as *r-m*). Abdominal T1+2 not excavate to its hind margin. Femora yellow except at their apices. Head profile as in Fig. 64]

Prosuccingulum Mesnil

[One species: *P. aberrans* Mesnil, Tanzania, description in Mesnil (1959:16–17). Known only from ♀ holotype.]

- Fore tibia with two *pv* setae. Scutellum with lateral setae (long or short). Genal depth subequal to width of third antennal segment. Hind tibia without *pd* preapical seta 6

- 6. Arista with very long plumosity. Two *post dc* setae. Scutellum with very weak or nearly hair-like basal setae, these *much* smaller than lateral setae. Abdominal T1+2 not excavate. Acrostichal setae absent. Prosternum usually setulose (one fine setula each side). [Long, slender, black-bodied forms with long legs and exceptionally long marginal and discal setae on the abdomen, with minthoine facies (including distinct enlargement of fore tarsi of ♀)] . . .

Eophyllophila Townsend

[One species: *E. africana* Villeneuve, tropical Africa, no good description.]

- Arista pubescent. Three *post dc* setae. Scutellum with strong basal setae, these subequal in size to or larger than laterals. Abdominal T1+2 with excavation distinct but not reaching hind margin (usually reaching to insertions of the median marginal setae). Acrostichal setae present, 1(2) + 2(3). Prosternum bare. [Forms usually with conspicuous pattern formed by thickly pale yellow to golden pollinose areas on mesonotum and as cross-bands on abdomen that stand out against black background]

Trigonospila Pokorný

[Three species: identification key in Mesnil (1962a:718–719). One additional species in Madagascar.]

- 7. Wing with vein *R*₁ bare 8

- Wing with vein *R*₁ setulose along its length (vein *Cu*₁ sometimes also with setulae). [Scutellum with only basal and subapical setae. Mid tibia with two or more *ad* setae. Acrostichal setae absent or not more than 1 + 1. Facial ridges bare. Second costal sector haired ventrally. Slender black forms with

silver-pollinose fasciae on abdominal segments, abdomen narrow subfusiform. Wing as in Fig. 110] **Kiniatilla** Villeneuve

[Two species: no key but differential characters cited by Mesnil (1952a:14) in description of *K. brevipalpis*.]

8. Wing with vein *M* incomplete, apical section from bend to wing margin absent. Scutellum with two pairs of marginal setae (basals and subapicals). [Ocellar setae very strong. Antennal axis below level of eye middle and antennae correspondingly very short. ♂ with two pairs of proclinate orbital setae but without outer vertical setae. Prosternum bare. Three strong humeral setae standing in a triangle. Basal node of vein *R*₄₊₅ with strong setulae extending half way to *r-m*. Abdominal T3 with four median marginal setae instead of the usual single pair] **Lindneriola** Mesnil
[One species: *L. paradoxa* Mesnil, East Africa, description in Mesnil (1959:17–19).]

— Wing with vein *M* complete to the wing margin. Scutellum with three or four pairs of marginal setae, at least lateral setae present in addition to basals and subapicals and sometimes also small apicals (except *Pararondania* and *Prodegeeria straeleni* with two pairs (basals and subapicals)) 9

9. Propleuron bare 11

— Propleuron haired. [Scutellum without apical setae. Fore tibia with two *pv* setae. Mid tibia with one *ad* seta] 10

10. Three *stpl* setae. Facial ridges setulose on lower half or more. Acrostichal setae 3 + 3. Abdominal T1+2 excavate back nearly as far as the median marginal setae. Genal dilation distinct on lower half of gena. Three *prst dc* setae. Abdomen moderately broad subovate, thickly and almost uniformly covered with grey or pale yellow pollinosity that obscures the ground colour. [Head profile as in Fig. 61] **Pelashyria** Villeneuve
[One species: *P. grisescens* Villeneuve, Zaïre, description in Villeneuve (1935:138–139).]

— Two *stpl* setae. Facial ridges bare. Acrostichal setae 1 + 1 or 2 + 1. Abdominal T1+2 not excavate. Genal dilation undeveloped. Two *prst dc* setae (sometimes a hair-like third between main two). Abdomen elongate fusiform, not uniformly pollinose but with basal bands of silvery to deep golden pollinosity (somewhat interrupted medially) on T3–T5

Prodegeeria Brauer & Bergenstamm

[Two species: identified easily by scutellum, *P. consobrina* with a pair of very strong lateral setae and *P. straeleni* without lateral setae.]

11. Fore tibia with one *pv* seta. ♀ often with short stubby peg-like or hook-like spinules ventrally on one or both intermediate abdominal segments and sometimes on end of hind coxae. Abdominal tergites with median discal setae in ♂ but these often lacking in ♀ (same species). [Usually two *prst dc* setae. Scutellum without apical setae. Mid tibia usually with one *ad* seta but two at least in *M. rubricosa*. Prosternum bare or haired. Wing with last section of *Cu*₁ usually very short (much shorter than *m-cu*). Facial ridges usually with some weak setulae up much of their height] . . . **Medina** Robineau-Desvoidy

[Thirteen species: identification key to six species in Verbeke (1964:180–182). Five additional species (together with three mainland species) in Madagascar to which key in Mesnil (1977c:183–187). See also couplet 13.]

- Fore tibia with two *pv* setae. ♀ without peg-like or hook-like spinules on either the abdominal venter or the hind coxae. Abdominal T3 and T4, usually also T5, with median discal setae in both sexes (♂ of *Pararondania* unknown but median discs on T3–T5 almost certainly present, as in ♀, and as in extremely closely allied genus *Steleoneura*, see couplet 16) 12
- 12. Lateral scutellar setae extremely strong, almost as long as the subapical scutellar setae and subequal in size to the basals (all three pairs of these setae appearing about the same size at first sight); apical scutellar setae absent. Wing with last section of vein *Cu*₁ very short, little more than half as long as *m-cu*. Facial ridges setulose on most of their height. Mid tibia with one *ad* seta. 13
- Lateral scutellar setae weak or absent, at most very much shorter than the subapical scutellar setae and weaker than the basals; small apical setae present (except in *Blondelia* and *Pararondania*). Wing with last section of *Cu*₁ longer, subequal in length to or longer than *m-cu*. Facial ridges either bare or setulose. Mid tibia with one *ad* seta or more 14
- 13. Acrostichal setae 1 + 1. Abdominal T1+2 not excavate to its hind margin. Presutural *ia* seta absent. Parafacials at upper ends with small hairs (these inconspicuous in *P. flava* because of white colour). Eyes sometimes with some short sparse hairing. [Forms with triangular head profile and with extensively or wholly reddish-yellow ground colour to body and legs]

Prosopofrontina Townsend

[Two species: identification key provided by couplet 3 in *Urophyllina* key of Mesnil (1961:693). Two additional species in Madagascar with identification key in Mesnil (1977d:322, as *Urophyllina*).]

- Acrostichal setae 2(3) + 3. Abdominal T1+2 fully excavate to its hind margin. Presutural *ia* seta present. Parafacials bare. Eyes bare. [Body and legs black in ground colour. ♂ with a strong isolated submedian *pv* seta on hind tibia (very rare position for such a seta and not known to occur in other Afrotropical blondeline genera and not normally in *Medina*)].

Unrecognised species of *Medina*

[Running out here is an unrecognised and probably undescribed species of *Medina* in which there are two *pv* setae on the fore tibia in place of the one that is usual in the genus. Two ♂ and one ♀ (BMNH) seen from Nigeria.]

- 14. Abdominal T1+2 excavate to its extreme hind margin between the median marginal setae. Three *prst dc* setae. Scutellum without apical setae. Mid tibia with two *ad* setae. [Facial ridges strongly setose on lower half or more. Ocellar setae very strong. Head of ♂ without proclinate orbital and outer vertical setae. Presutural *ia* seta well developed. Three *stpl* setae. Ground colour of body black except for tawny apex to scutellum]

Blondelia Robineau-Desvoidy

[One species: *B. tibialis* Mesnil, South Africa and Zaïre, described (Mesnil, 1962b:753) in key to Holarctic species.]

- Abdominal T1+2 not excavate to its hind margin. Two *prst dc* setae (except sometimes three in *Kiniatiliops*). Scutellum with apical setae, sometimes very small (except absent in *Pararondania*). Mid tibia with varied number of *ad* setae (one in *Afrolixa* and occasionally in *Kiniatiliops*) 15

15. Facial ridges with strong setae on more or less their whole height. ♀ with one pair of proclinate orbital setae standing in the frontal line immediately below, and directly in line with, the reclinate orbital setae. ♀ terminalia with a large subcircular shining ovipositor lamella that is exposed in situ (as in *Medina*). [♀ without outer vertical setae. Presutural *ia* seta absent. Three *stpl* setae. Apical scutellar setae divergent or subparallel. Second costal sector bare ventrally]..... **Eomedina** Mesnil
 [One species: *E. apicalis* Curran, tropical Africa, description in Curran (1927a:8) and in Mesnil (1960:651–652, as *griseus*).]
- Facial ridges bare or at most with some weak setulae confined to lowermost third. ♀ with two pairs of proclinate orbital setae which (as normal) stand on the parafrontals outside of the rows of frontal setae. ♀ terminalia without such modification..... 16
16. Antennae elongate and reaching almost to level of vibrissae, third segment parallel-sided in profile and about three or more times as long as second segment. Epistome not at all prominent and head at vibrissal axis much shorter than at the antennal axis. Wing with second costal sector normal, several times longer than *r-m*. Scutellum with lateral and apical setae (but these sometimes very weak)..... 17
- Antennae very small and falling far short of vibrissal level, third segment suborbicular and about equal in length to second segment. Epistome prominent in profile (facial profile concave) and head at level of vibrissal axis as long as at the antennal axis (Fig. 62). Wing with second costal sector exceptionally short, not longer than costal spine and only a little longer than *r-m*. Scutellum without lateral and apical setae (only two pairs of marginals, the basals and subapicals, present). [Ocellar setae strong. Facial ridges bare. Parafacials narrow, not as wide as antenna. Gena very narrow, its depth not more than width of third antennal segment. Two humeral setae. Two *stpl* setae. Prosternum setulose. Propleuron bare. Wing with cell *R*₅ closed just before wing edge and *very short* petiolate; *m-cu* meeting *M* mid-way between *r-m* and the bend; second costal sector bare ventrally. Body of ♀ ash-grey pollinose, the abdomen with sharply defined pattern of large paired brownish black submedian spots on each visible tergite (ie. eight spots including those on T5)]..... **Pararondania** Villeneuve
 [One species: *P. multipunctata* Villeneuve, South Africa, description in Villeneuve (1916b:498–499). Known only from ♀ holotype (at present in CNC, Ottawa). *Pararondania* very close to Holarctic genus *Steleoneura* Stein in which ♀ has *v* seta on mid tibia but ♂ does not: ♂ of *Pararondania* probably also lacks this seta and probably also differs from ♀ in having approximated eyes and no proclinate orbital setae (cf. *Afrolixa* in which ♂ eyes well separated and proclinate orbital setae present).]
17. Two or three pairs of *post acr* setae. Wing with bend of vein *M* nearer to wing edge than to *m-cu* and latter meeting *M* about mid-way between *r-m* and the bend; second costal sector bare ventrally. Facial ridges bare. Parafacials narrow, their width at mid-point less than that of third antennal segment. Apical scutellar setae divergent. Mid tibia with one *ad* seta. Head of ♂ with two pairs of proclinate orbital setae (as in ♀) and without outer vertical setae..... **Afrolixa** Curran

[One species: *A. macula* Curran, southern Africa, description in Curran (1939:4-5). Specimens in BMNH from Ivory Coast, Sudan and Uganda apparently belong to closely similar undescribed species.]

- One pair of *post acr* setae (prescutellar) or virtually none. Wing with bend of vein *M* as near to *m-cu* as to wing edge and *m-cu* meeting *M* at a point nearer to the bend than to *r-m*; second costal sector haired ventrally. Facial ridges finely setulose on their lowermost quarter or third. Parafacials broad, their width at least as great as that of third antennal segment. Apical scutellar setae either divergent or cruciate. Mid tibia usually with 2-4 *ad* setae (sometimes only one). Head of ♂ with one pair of proclinate orbital setae or none and with small outer vertical setae **Kiniatiliops** Mesnil

[Three species: no available identification key.]

XXIV. Key to Afrotropical genera of Exoristini

[Note. In addition to having a very small pre-alar seta and an abrupt bend to vein *M* with a fold-like appendix (Fig. 108), the genera covered by this key all have a submedian ν seta on the mid tibia, at least two *ad* setae on the mid tibia, bare propleuron, bare parafacials (occasionally a few stiff hairs at extreme upper end immediately below lowest frontal setae), and abdominal T1+2 excavate to its hind margin.]

1. Wing with cell *R*₅ closed before the margin and conspicuously petiolate, the petiole about twice as long as *r-m*; setulae on vein *R*₄₊₅ extending well beyond *r-m*. Dorsocentral setae 2 + 3. [Eyes bare. Facial ridges with strong downcurved setae. Two strong humeral setae (occasionally very small third in line mesad of main two). Scutellum with apical setae directed upwards. Wing with *m-cu* meeting *M* nearer to *r-m* than to the bend of *M*]

Chaetoria Becker

[One species: *C. stylata* Becker, widespread, description in Mesnil (1960:628-630). Additional species in Afrotropical region is *C. aurifrons* Bezzi known only from Rodriguez Island, distinctions as follows: vein *R*₁ setulose on mid-part in *stylata*, all bare in *aurifrons*; ♂ with proclinate orbital setae as ♀ in *stylata* but not in *aurifrons*; abdominal T5 with small erect discal setae in *stylata*, without discal setae in *aurifrons*.]

- Wing with cell *R*₅ open or just closed at wing edge (except in *Bessa africana* with a very short petiole but then 3 + 4 *dc* setae); setulae on vein *R*₄₊₅ not extending beyond *r-m*. Dorsocentral setae either 3 + 3 or 3 + 4 (except some *Phorinia* with only 2 + 3) 2
- 2. Upper occiput with an irregular row of black setulae behind the postocular row. [Large forms with sturmiine facies, often with somewhat reduced mesonotal bristling and hind tibia of ♂ often with a very regular close set *ad* fringe. Eyes bare. Facial ridges with weak downcurved setae close set on about the lower half. 3 + 4 *dc* setae. Scutellum with horizontal apical setae. Wing with *m-cu* meeting *M* much nearer to bend than to *r-m*]

Chaetexorista Brauer & Bergenstamm

[Five species: identification key, as part of *Blepharella* (couplets 7-10) in Mesnil (1952b:235-236).]

- Upper occiput without black setulae behind the postocular row 3

3. Facial ridges with strong downcurved setae on almost their whole height . . . 4
 — Facial ridges without strong downcurved setae on their whole height, with only the usual few small setulae near the vibrissae or at most with a few small inconspicuous setulae on lowermost third. [Vibrissae inserted slightly above level of epistomal margin. Arista with second segment usually not elongate. Eyes bare or haired. 3 + 4 *dc* setae (3 + 3 seen in some specimens of *E. ebneri*). Scutellum with apical setae rather weak, usually much smaller than lateral setae, horizontal or directed half-upwards. Wing with *m-cu* much nearer to bend of *M* than to *r-m* and with last section of *Cu*₁ short (subequal in length to, or little longer than, *m-cu*). Wing venation as in Fig. 108]

Exorista Meigen

[Eighteen species: no available identification key and revision much needed. Many undescribed species, including at least 13 with distinct male genitalia that have been confused in collections under *E. sorbillans* (eg. see BMNH collection). Two additional species in Madagascar.]

4. Wing with bend of vein *M* and *m-cu* exceptionally remote from wing edge, and *m-cu* much nearer to *r-m* than to the bend; last section of *Cu*₁ nearly four times as long as *m-cu* and *m-cu* exceptionally strongly oblique. Three *post dc* setae. [Eyes haired but hairing short and sparse (especially in ♀). Arista with second segment not elongate. Vibrissae inserted distinctly above level of mid-point of epistomal margin. Scutellum with apical setae directed very strongly upwards. Abdomen of ♀ with T5 long-subconical]

Stomatomyia Brauer & Bergenstamm

[One species: *S. approximata* Villeneuve, widespread, probably not distinct from *S. acuminata* Rondani, description in Mesnil (1960:611–612, as *Spoggosia*). Genus close to *Chetogena* and sometimes considered synonymous therewith.]

- Wing with bend of *M* and *m-cu* not exceptionally remote from wing edge, *m-cu* usually (not *Bessa*) nearer to bend than to *r-m*; last section of *Cu*₁ not more than about twice as long as *m-cu* and *m-cu* not strikingly oblique. Four *post dc* setae (except three in some *Phorinia* species) 5
 5. Scutellum without apical setae. Wing with *m-cu* meeting *M* mid-way between *r-m* and the bend or slightly nearer to *r-m*. Eyes bare. Very small species, length 3–4.5 mm. [Antennae of ♂ very long and heavy, third segment nearly six times as long as second. Arista with second segment elongate. Two strong humeral setae, sometimes with small third mesad of main two. Four *post dc* setae] **Bessa** Robineau-Desvoidy

[One species: *B. africana* Curran, southern Africa, description in Curran (1941:9–10, as *Kuwanimyia*).]

- Scutellum with apical setae. Wing with *m-cu* meeting *M* nearer to the bend than to *r-m*. Eyes usually haired (haired in named species but bare in unidentified species seen from southern Africa). Larger species, length 6–12 mm 6
 6. Arista with its second segment conspicuously elongate (about 3–6 times as long as its width). Pollinosity of the frons, mesonotum, and usually also the abdominal pollinose fasciae, from pale brassy yellow to deep golden (giving specimens a distinctly yellowish cast to naked eye). Dorsocentral setae

varied, usually 3 + 3 or 3 + 4 but only 2 + 3 in *P. sadista* and *P. pumila* (? latter a synonym of former). Scutellum with apical setae directed upwards . . .

Phorinia Robineau-Desvoidy

[Seven species: no available identification key and revision needed. Species with exceptionally distinctive male genitalia that remain unstudied.]

- Arista with its second segment very short (not more than about 1.5 times as long as wide). Pollinosity of the frons, mesonotum, and abdominal fasciae silvery grey or pale greyish yellow (specimens more or less black-coloured to naked eye). Dorsocentral setae 3 + 4. Scutellum with apical setae either horizontal or directed half-upwards **Chetogenia** Rondani

[Four species: no available identification key and revision needed. Some undescribed species, or apparently such, known, including one with bare eyes and wing venation approaching that of *Stomatomyia* seen from southern Africa (BMNH). One additional species in Madagascar.]

XXV. Key to Afrotropical genera of Ethillini

[Note. Several of the genera covered by this key are poorly differentiated and would be better combined into larger and more distinctly separable genera. See 'Notes on the genera of Ethillini' immediately following this key.]

1. Dorsocentral setae 3 + 4¹ 2
- Dorsocentral setae 2 + 3 or 2 + 4 **Nemorilloides** Brauer & Bergenstamm
[Two species: differentiated by following characters: *N. flaviventris* with four *post dc* setae and abdomen with clear yellow ground colour anterolaterally; *N. carbonatus* with three *post dc* setae and abdominal ground colour uniformly black.]
2. Lower calypter distinctly bent downwards on its outer margin 3
- Lower calypter normal, not rather suddenly downbent on its outer part and nearly flat (ie. only with the usual very slight and even curvature across its width). [Eyes haired. Vibrissae inserted distinctly above level of epistome. Humeral callus with the three main setae standing in line. Inner vertical setae parallel. ♀ with outer vertical setae. Second arisal segment short. Scutellum with normal complement of four pairs of scutellar marginals of which apicals crossed and horizontal. Pre-alar seta small, subequal in size to first *post ia* seta] **Mycteromyiella** Mesnil
[Running out here are specimens (BMNH) of an undescribed species of this genus from Angola. See entry for *Mycteromyiella* in catalogue (Crosskey 1980:862).]
3. Facial ridges setose on almost their whole height. [Eyes densely haired. Inner vertical setae parallel] 4
- Facial ridges bare (except for usual few setulae near vibrissae) or at most with some weak setulae on lowermost two-fifths 5
4. Scutellum without lateral setae (total of three pairs of marginals). Humeral callus with four setae, basal row of three standing in line and one (small) set forwards. Second arisal segment elongate (about three times as long as its width). Upper occiput with irregular black setulae behind the postocular row. Second costal sector haired ventrally **Ethylloides** Verbeke
[One species: *E. emdeni* Verbeke, South Africa, description in Verbeke (1970:286–290).]
- Scutellum with a pair of lateral setae (total of four pairs of marginals). Humeral callus with five setae (sometimes even six) of which the three

¹ One unusual specimen of *Paratryphera* seen with only two *prst dc* setae.

main ones stand in a triangle. Second aristal segment not elongate. Upper occiput without black setulae behind postocular row. Second costal sector bare ventrally. [Ocellar setae present or absent. Mid tibia with at least one small seta additional to main *ad* seta, sometimes several strong *ad* setae. ♀ abdomen with flattened terminal sternites widely visible in situ but without piercing ovipositor] **Zelindopsis** Villeneuve

[Twelve species (but some synonymy probable): key to six species in Verbeke (1962a:168–169). The other nominal species assignable to *Zelindopsis* (see Crosskey 1980:863) unknown to Verbeke. *Zelindopsis nitidicauda* Curran almost certainly synonym of *Z. illita* Villeneuve, and possibly also *Z. nudapex* Curran.]

5. Humeral callus with three setae standing in a straight line, usually also with a fine fourth seta set forwards of the main line. Inner vertical setae parallel or subparallel, their apices widely separated. Second aristal segment usually distinctly elongate (not in *P. sordida*) and about 2–3 times as long as its width. Upper occiput with some very fine dark irregular setulae behind the postocular row. ♀ with distinct outer vertical setae. Small forms, length 5–8 mm [Ocellar setae strong. Second costal sector short, less than half as long as third sector and *much* shorter than first sector] 6

- Humeral callus with three main setae standing distinctly in a triangle and with a fourth seta set forwards from the inner pair of the triangle. Inner vertical setae convergent and crossing before their apices. Second aristal segment not at all elongate. Upper occiput without dark setulae behind postocular row. ♀ without clearly differentiated outer vertical setae. Larger forms, length 8–13 mm 7

6. Frontal setae that descend below level of antennal base forming a single regular row. Scutellum with a pair of well-developed lateral setae (subequal in size to apicals) **Ethilla** Robineau-Desvoidy

[One species: *E. tenor* Curran, Zaïre, description in Curran (1927a:5, as *Zenillia*). Specimens in BMNH from Kenya, Malawi and Angola probably this species, two males from South Africa probably belonging to undescribed species.]

- Frontal setae that descend below level of antennal base forming an irregularly doubled row. Scutellum without lateral setae, or (*sordida*) with a pair of short fine inconspicuous laterals that are smaller than the apicals

Paratryphera Brauer & Bergenstamm

[One species: *P. sordida* Villeneuve, Kenya to South Africa, description in Villeneuve (1916b:485–486, as *Zenillia*). Two males in BMNH (Kenya and South Africa) apparently belong to two undescribed species (both differ from *sordida* in having two pairs instead of one pair of reclinate orbital setae and in completely lacking scutellar laterals). Note: *P. sordida* has the normal two pairs of reclinate orbital setae in the female but only one pair (exceptionally strong) in male, making the male unique among Afrotropical ethillines for having less than two pairs of these setae.]

7. Abdomen of ♀ with well exposed broad flat sternites and without a piercing hook-like ovipositor (see Verbeke, 1962b:46, Fig. 29). Eyes densely long-haired. Ocellar setae strong, as large as or larger than reclinate orbital setae. Palpi black. [♂ usually with about four pairs of reclinate orbital setae and often with unusual feature of some very long fine close hair on posterior surface of hind tibia] **Phorocerosoma** Townsend

[Seven species: identification keys in Verbeke (1962a:170–171; 1962b:18–21).]

- Abdomen of ♀ without the sternites broadly exposed and with a short or long downcurved ovipositor (see Verbeke, 1962b:46, Fig. 30). Eyes bare or haired (when haired the hairing usually rather short). Ocellar setae usually very weak and almost hair-like or virtually absent (distinct and nearly as large as reclinate orbital setae in the type-species *G. seychellensis* known only from Seychelles). Palpi yellow or yellow-brown (except black in *G. saegeri* according to description: not seen) **Gynandromyia** Bezzi

[Thirteen species (including one hitherto in *Zelindomyia* and three hitherto in *Trypherosoma*): identification keys covering most species in Verbeke (1962a:166–172) but much care needed as species unlikely to be reliably identified without sight of types and the supposedly widespread species *habilis* Brauer & Bergenstamm (type-locality South Africa) not covered. A difficult group in need of revision and better keys.]

Notes on the genera of Ethillini

Preparation of the keys has required a close look at the characters of the several genera that have been, and continue to be, included in this tribe since its establishment by Mesnil (1944, as 'Ethyllina'). It is clear that some genera are poorly defined and that future revisionary work should consider the possible amalgamation of some nominal genera into larger and better defined genera. A first step is the new synonymy (established below) of *Zelindomyia* Verbeke and *Trypherosoma* Verbeke with *Gynandromyia* Bezzi herein established (see below). The following taxonomic notes are given to call attention to certain characteristics relevant to future studies in the Afrotropical region.

1. *The genus Mycteromyiella*. In an earlier work (Crosskey 1973b) I assigned this little-known genus to Ethillini on the grounds of its apparent relationship to the *Gynandromyia*–*Phorocerosoma* group as suggested by external adult morphology, the huge beret-like development of the posterior puparial spiracles and the orthopteroid hosts. This placement is supported by Shima (1976), who has described several Oriental species. An undescribed species is known from Africa (Angola) which certainly belongs to *Mycteromyiella* but which differs from Orien-Australian species in having the three main setae of the humeral callus placed in a straight line instead of in a distinct triangular configuration.

2. *The Ethilla*–*Paratryphera*–*Nemorilloides*–*Ethylloides* group. These four genera are closely allied, and together form a quite distinct group from *Gynandromyia*–*Phorocerosoma* and allies discussed hereafter. The only host record for any Afrotropical species appears to be that of an unidentified *Ethilla* specimen (BMNH) reared from the geometrid moth *Heterostegane indularia* Guenée in South Africa, but in other zoogeographical regions species of *Ethilla* and *Paratryphera* are known to parasitise Geometridae and other Lepidoptera. Almost certainly the hosts for all these genera in Africa are lepidopterous. Structurally the four genera merge imperceptibly one into the other, although *Ethylloides* is rather more distinctive than the other three genera because of its setulose facial ridges and haired ventral surface to the second costal sector. Whether these characters justify its separate generic status is questionable, but there is little doubt that a better classification would result from sinking *Paratryphera* and *Nemorilloides* into synonymy with *Ethilla* and widening the definition of the latter accordingly. This is not done at present, as non-Afrotropical *Ethilla*–*Paratryphera* need also to be considered, something beyond the scope of the present work.

The main characters of this group of four genera are: Eyes densely haired; inner vertical setae parallel; ♀ with differentiated outer vertical setae; ocellar setae strong; upper occiput with some very fine irregular dark setulae; humeral callus with the three main setae standing in line; second arisal segment nearly always distinctly elongate (two or three times longer than its width); number of *dc* setae varied, 2 + 3 or 2 + 4 or (usually) 3 + 4; scutellum with or without lateral setae; pre-alar seta very small, subequal in size to or smaller than first *post ia* seta; abdomen of ♀ without specially modified piercing ovipositor.

3. *The Gynandromyia-Phorocerosoma group*. I have elsewhere (Crosskey 1976) discussed the difficulty of finding a satisfactory distinction between the genera *Gynandromyia* and *Phorocerosoma* other than the form of the ♀ abdomen, the females of the former genus having a piercing, rather hook-like ovipositor and those of *Phorocerosoma* having large, widely exposed abdominal sternites but no piercing ovipositor. Despite this obvious difference in female terminalia, clearly related to a different oviposition technique, species of both genera parasitise Orthoptera and have exactly the same kind of extremely enlarged and prominent, contiguous or nearly contiguous, posterior puparial spiracles. Characters other than those of the ovipositor are intangible and the differences cited by Verbeke (1962a:166) in couplet 4 of his ethilline generic key do not hold up: although *Phorocerosoma* is consistent so far as I know (not all described species seen) in having very long and dense hair on the eyes, strong ocellar setae, black palpi, and multiple *ad* setae on the mid tibia, all of these characters occur in some species of *Gynandromyia* although not simultaneously. Even the type-species of *Gynandromyia*, viz. *G. seychellensis* Bezzi known only from the female holotype¹, shows (apart from its very short downcurved ovipositor) haired eyes and moderately strong ocellar setae—these nearly as large as the reclinate orbitals—and thus approaches *Phorocerosoma*.

I consider it best, despite the close similarity, to maintain *Phorocerosoma* and *Gynandromyia* as valid genera. On the other hand, I am unable to discover any consistent and satisfactory distinction between Verbeke's genera *Zelindomyia* and *Trypherosoma*, or between these entities together and *Gynandromyia*, and I accordingly here sink these two generic names into new synonymy with *Gynandromyia*. The genera *Zelindomyia* and *Trypherosoma* were earlier (Crosskey 1980) listed as valid genera because both were unknown to me when the catalogue was prepared.

Verbeke (1962a) distinguished *Zelindomyia* and *Trypherosoma* from *Gynandromyia* (also from *Phorocerosoma* and *Zelindopsis*) in couplet 1 of his key to ethilline genera by means of the genal dilation—haired virtually up to the lowermost point of the eye in *Zelindomyia* and *Trypherosoma* but eye and gena separated by at least a narrow bare area in *Gynandromyia*. This is an extraordinarily feeble generic distinction and does not hold, some species of *Gynan-*

¹ In the original description of *Gynandromyia seychellensis* there was a misrecognition of the sex of the holotype, which Bezzi thought to be male (hence his generic name *Gynandromyia* because an apparent male has proclinate orbital setae, usually a female character). In fact the holotype of *seychellensis* is female and normal, and the generic name somewhat inappropriate. Terzi's figures of the head in the original description (Bezzi 1923:100), especially the facial view, are not good by Terzi's usually masterly standard, as the frontal region is shown too narrow and the hairy eyes are shown bare.

dromyia having a haired genal dilation that almost meets the eye. Examination of the types of *Z. grossa* and *T. gilvum* (respectively type-species of the two genera) shows two extraordinarily similar male specimens that to the naked eye look almost identical (both having an abdominal pattern formed by extensive pale greyish yellow pollinosity on much of the surface and narrow black hind-bands on T3 and T4 which extend forwards taperingly to a point in the mid-line). In *Z. grossa*, however, there are dense ventral abdominal hair-like fascicles on T4 and T5 (golden-orange in colour) which are lacking in *T. gilvum*, and abdominal T3 of the latter lacks erect median marginal setae such as occur in *grossa*. Apart from these features, Verbeke (1962a:166) claimed to see a distinction in the ocellar setae, said in his key couplet 2 to be 'petites mais distinctes' in *Zelindomyia* but 'tres fines, à peine ou non distinctes' in *Trypherosoma*. In fact, ocellar setae are hardly at all differentiated (little more than strong hairs) in both 'genera'. Thus not only do *Zelindomyia* and *Trypherosoma* not differ on this character, but they do not differ by it either from *Gynandromyia* in which the ocellars are usually extremely feeble. Other features of *Zelindomyia*-*Trypherosoma* also do not differentiate them from *Gynandromyia* since although the eyes are quite bare in the former they are also bare in some species of the latter, and presence or absence of a pair of median marginal setae on abdominal T3 also varies between *Gynandromyia* species. Thus I have not been able to find convincing generic distinctions in the characters considered diagnostic for *Zelindomyia* and *Trypherosoma* by Verbeke; nor have I been able to discover other characters that justify these genera, which I regard as the product of extreme generic splitting. I therefore place the four species described by Verbeke in these genera into *Gynandromyia* and establish the following new generic combinations accordingly: *Gynandromyia grossa* (Verbeke, 1962) **comb. n.**, *Gynandromyia crypta* (Verbeke, 1962) **comb. n.**, *Gynandromyia fumigata* (Verbeke, 1962) **comb. n.** and *Gynandromyia gilva* (Verbeke, 1962) **comb. n.**

The main characters of the *Gynandromyia*-*Phorocerosoma* group are: eyes bare or haired; inner vertical setae cruciate; ♀ without outer vertical setae or these ciliform; ocellar setae varied, strong, weak or virtually absent; upper occiput without black setulae behind postocular row (? exceptions); humeral callus with the three main setae standing in a triangle; second arisal segment not elongate; dorsocentral setae always 3 + 4; scutellum always with lateral setae; prealar seta moderately large, usually distinctly longer and stronger than first *post ia* seta and at least subequal in size to it; abdomen of ♀ with externally visible modifications, either with downcurved piercer-ovipositor or with broad flat sternites almost all exposed.

4. *The genus Zelindopsis*. The hosts and puparia of this genus appear to be still unknown. On adult morphology the genus is moderately well defined and recognised by its combination of haired eyes, setose facial ridges, unusually numerous setae on humeral callus (normally five with three main ones in triangle and an unusual-position humeral standing just mesad of the outermost one of the three forming the main triangle of setae) and subparallel inner vertical setae. The last feature differentiates *Zelindopsis* rather obviously from *Phorocerosoma* and *Gynandromyia* in which the inner verticals are cruciate.

XXVI. Key to Afrotropical genera of Winthemiini

[Note. In the genera covered by this key the eyes are haired, and the barett (except sometimes in females of *Nemorilla*) is finely haired along its length. The genus *Hemiwinthemia* has not been seen and is omitted¹.]

1. Four *post dc* setae. Scutellum with apical setae horizontal, or if directed noticeably upwards then not very strong and much weaker than the lateral setae. 2
- Three *post dc* setae. Scutellum with extremely strong apical setae that are directed upwards and subequal in size to the lateral setae. [Attractively patterned species, thoracic dorsum with a black, cross-like mark standing out against pale-pollinose areas and with paired dark spots on prescutum either side of anterior arm of the 'cross' (cross larger in ♂ than ♀ and slightly merging with spots sometimes). Abdomen black in mid-line and with sublateral black spots on intermediate tergites (these usually isolated in ♀ but merging partially towards hind margins of tergites with the dark centre line in ♂), flanks of ♂ abdomen clear pale orange-yellow, apex of T5 orange-yellow in ♀. Calyptae pale orange-yellow] **Ossidingia** Townsend
 [One species: *O. cruciata* Wiedemann, widespread, no modern description. Species catalogued (Crosskey 1980:863) in *Nemorilla* following placement of *cruciata* in this genus by Mesnil (1949b:77) but here preferred from further study to restore *Ossidingia* as a valid genus distinct from *Nemorilla*.]
2. Scutellum with the subapical pair of setae standing very widely apart, distance between their bases about twice as great as that between a subapical seta and its corresponding basal seta (Fig. 122) 3
- Scutellum with the subapical pair of setae standing not very widely apart, distance between their bases subequal to that between a subapical seta and its corresponding basal seta **Nemorilla** Rondani
 [One named species, *N. afra* Curran, widespread, but revision needed as several unrecognised species occurring in southern Africa and Indian Ocean islands. Also *N. nemorilloides* in Seychelles.]
3. Three *stpl* setae (2+1). Parafacials entirely bare or with a little fine hairing confined to the upper anterior parts 4
- Two *stpl* setae. Parafacials with close, fine hairing on their whole height. [Varied forms, usually with long, soft, white or yellow pile on parts of the thorax and sometimes also the abdomen and femora (some species with rather bee-like or *Eristalis*-like appearance). ♂ usually without reclinate orbital setae. Facial ridges bare or setulose. Humeral callus with the three strongest setae standing in a triangle. Scutellum with or without lateral setae. Mid tibia with either one or more than one *ad* seta. ♂ hind tibia usually with a close-set regular *ad* fringe. ♂ abdomen sometimes with large dense hair-fascicles ventrally on T4 and T5. Some species strongly sexually dimorphic (eg. ♀ pale silver-grey pollinose but ♂ deep golden pollinose, or mesopleural hair yellow in ♂ but black in ♀) **Winthemia** Robineau-Desvoidy

¹ The genus *Hemiwinthemia* Villeneuve is of dubious status and probably should not be maintained distinct from *Winthemia*. It is known only from the female holotypes of the three described species: these have not been located but are probably in IRSNB, Brussels. Verbeke (1973) supposedly diagnosed the genus, citing two sternopleural setae as one of its characters (as in typical *Winthemia*), but the two species he described in the same work have either three or four *stpl* setae instead of the two present in the type-species (viz. *H. calva* Villeneuve).

[Ten species: no available identification key. A large and difficult genus in much need of revision for whole of Old World tropics and southern Africa. Several undescribed species known from Africa (BMNH), and several described species occurring in Madagascar and Réunion additional to mainland forms.]

4. Humeral callus with the three main setae standing in a triangle. Abdominal T1+2 without definite median marginal setae, T3 with one pair of median marginals or none. Scutellum with a pair of small lateral setae (lacking on one side in occasional specimen). Upper occiput without black setulae behind the postocular row. ♂ hind tibia with a regular *ad* fringe that lacks any long intercalary seta 5
- Humeral callus with the three main setae standing in line. Abdominal T1 + 2 with a pair of strong median marginal setae and T3 with a row of four median marginals. Scutellum without lateral setae. Upper occiput with irregular black setulae behind the postocular row. ♂ hind tibia with a strong intercalary seta in the *ad* fringe. [Parafacials bare and wider than third antennal segment. Prosternum setulose. Prescutum and scutum without definite vittae and rather shining black (except for a subtriangular reddish-brown mark in a prescutellar position). Abdomen tawny red except for black median mark on T3 and black median depression of T1+2, hind margins of tergites indefinitely darkened] **Timavia** Robineau-Desvoidy
 [One species: *T. capensis* Schiner, South Africa, brief description by Mesnil (1949b:73, in key as *Nemosturmia*).]
5. Mid tibia with one *ad* seta. Prosternum haired. Parafacials bare. ♂ head with one pair of reclinate orbital setae and without proclinate orbital setae. ♂ abdominal T3 without median marginal setae. [Pollinosity of thoracic dorsum and abdominal fasciae distinctly yellow to naked eye, parafrontals of ♂ golden; tip of abdomen orange-red in both sexes. Wings distinctly pale yellowish brown] Undescribed sp. (? *Winthemia*)
 [Running out here are specimens (CNC and BMNH) from Uganda apparently belonging to an undescribed species that on total facies is assignable to *Winthemia* although the parafacials are bare.]
- Mid tibia with two strong *ad* setae. Prosternum bare. Parafacials haired on the upper anterior parts. ♂ head without reclinate orbital setae and with two pairs of proclinate orbital setae (these standing extremely close to, and not well differentiated from, the uppermost proclinate pairs of frontal setae). ♂ abdominal T3 with a pair of strong erect median marginal setae. [Pollinosity of thoracic dorsum and parafrontals greyish white, that of abdomen white but thin and inconspicuous and not forming definite fasciae. Wings clear] Undescribed sp. (? *Winthemia*)
 [Running out here is a specimen (BMNH) from Pretoria apparently belonging to an undescribed species assignable to *Winthemia* though differing from typical members of this genus in having the prosternum bare, the parafacials mainly bare, and three *stpl* setae.]

XXVII. Key to Afrotropical genera of Carceliini and Anacamptomyiini

[*Note.* As adult flies the Anacamptomyiini are not satisfactorily distinguishable from Carceliini but are biologically distinct because they parasitise vespoid Hymenoptera. For convenience, *Anacamptomyia*, the only Afrotropical genus of Anacamptomyiini, is included here with Carceliini; if a carceliine-like African tachinid is known to come from a vespoid host it will belong to *Anacamptomyia*.]

1. Eyes conspicuously haired 2
- Eyes bare (except in *Thecocarcelia trichops* and *Carcelia coniformis* with some very short and sparse hairing not immediately obvious) 4
2. Facial ridges bare (excepting the usual few small setulae near the vibrissae) 3
- Facial ridges setose on their whole height or almost so. [Parafrontals very wide and interfrontal area reduced to a narrow strip. Head with several pairs of reclinate orbital setae (the row extending well down on frons) and often with some of the frontal setae strongly reclinate. Ocellar setae absent. Humeral callus with the three main setae standing in line. 3 + 4 *dc* setae. Propleural seta absent. Two *stpl* setae. Apical scutellar setae strong, directed upwards and crossed. Mid tibia with a submedian *v* seta and with one *ad* seta. Hind coxa without posterodorsal seta. Abdomen with or without median discal setae on T3 and T4, ♂ sometimes with discrete dense hair-fascicles ventrally on these tergites. Legs and most of abdomen reddish yellow. Puparium with posterior spiracular openings situated on a large single median terminal volcano-shaped prominence] **Anacamptomyia** Bischof
 [Six species: identification key in Mesnil (1950b:22–24) but undescribed species known and revision needed.]
3. Scutellum with lateral setae (one or two pairs, total of four or five pairs of scutellar marginals). Presutural *ia* seta present. Two or three pairs of reclinate orbital setae . . . **Carcelia** Robineau-Desvoidy s.l. (see key XXVIIa)
 [Large and difficult genus with several subgenera (see key XXVIIa immediately following this key). The great majority of species have haired eyes and run out here, but *C. coniformis* with bare eyes runs out separately at couplet 6. For further detail of included species see subgeneric key.]
- Scutellum without lateral setae (total of three pairs of scutellar marginals). Presutural *ia* seta absent. Four to six pairs of reclinate orbital setae. [Antennae very small. Ocellar setae absent. 3 + 4 *dc* setae. Propleural seta absent. One or two *stpl* setae. Barete finely haired on most of its length. Subapical scutellar setae standing very far apart (distance between bases twice that between subapical seta and its corresponding basal seta). Mid tibia without a submedian *v* seta and with one *ad* seta. Hind coxa without posterodorsal seta. Abdomen thickly coated in silver or golden pollinosity] . . .
Leucocarcelia Villeneuve
 [One species: *L. argyrata* Villeneuve, Malawi, known only from ♂ holotype (BMNH), description in Villeneuve (1921:30–31). This specimen has the body almost uniformly covered in beautiful thick silver pollinosity and there is only one *stpl* seta (unknown ♀ may differ). The BMNH collection contains one congeneric ♂ specimen from Nigeria representing an undescribed species: in this the body is golden pollinose and there are two *stpl* setae (fine anterior *stpl* present additional to the strong posterior one, which is alone present in holotype of *argyrata*).]
4. Four *post dc* setae 5
- Three *post dc* setae 8
5. Two or three *stpl* setae 6
- Four *stpl* setae 7
6. Three *stpl* setae (in the unusual arrangement 1 + 2). Hind coxa bare on the posterodorsal surface. Fore tibia with two *pv* setae. [Frontal and facial

regions unusually narrow, ♂ with one pair of strong proclinate orbital setae and uppermost pairs of frontals strong and somewhat proclinate. Palpi of ♀ very strongly clubbed. Humeral callus with three setae standing in line. Mid tibia with submedian *v* seta and one *ad* seta. Abdomen with conspicuous sharply defined dark hind margins to T3, T4 and T5, basal parts of these tergites yellow pollinose over pale ground colour (giving them golden-orange appearance). *Puparium with posterior spiracles on very large paired prominences*]. 'Argyrophylax' *aureiventris* Villeneuve

[Generically unplaced carceliine widespread in tropical Africa, descriptions in Villeneuve (1910:252, as *Sturmia*) and Mesnil (1950b:19–20, as *Argyrophylax*). Considered incorrectly assigned to *Argyrophylax* Brauer & Bergenstamm.]

- Two *stpl* setae. Hind coxa with a long fine setula on the posterodorsal surface margin. Fore tibia with one *pv* seta **Carcelia** Robineau-Desvoidy (part)

[Running out here are two species of *Carcelia* s.l. unusual for having the eyes bare or virtually so. For further detail of these species see couplet 4 of key to *Carcelia* subgenera.]

- 7. Three *prst dc* setae (total dorsocentral complement 3 + 4). Frontal setae inclinate and crossed as normal. Apical scutellar setae horizontal or nearly so. ♀ abdomen with T5 conical or subconical, about as long in mid-line as its basal width; short shining ovipositor lamella usually visible protruding under T5. [Antennae usually long (third segment about 3.5–6 times as long as second segment). Ocellar setae usually strong. Humeral callus with four setae, main three standing in line. Mid tibia with submedian *v* seta. Hind coxa bare on posterodorsal surface. Wing usually with at least two setulae at base of *R*₄₊₅, these small. ♂ with or without proclinate orbital setae].

Thecocarcelia Townsend

[Seven species; no available identification key and revision needed. Apparently several undescribed species (BMNH).]

- Two *prst dc* setae (total dorsocentral complement 2 + 4). Frontal setae conspicuously reclinate (especially the uppermost pairs), forming a continuous row of reclinate setae with the reclinate orbitals and not clearly differentiated from these. Apical scutellar setae directed upwards. ♀ abdomen pointed apically but T5 short and length in mid-line only about half the basal width. [Lateral scutellar setae weak, not larger than apicals. Wing with an exceptionally strong setula on basal node of *R*₄₊₅ that is twice as long as *r-m* (alone or with additional small setula). ♂ without proclinate orbital setae].

Thelyconychia solivaga Rondani (part)

[Running out here are specimens of *T. solivaga* with four *post dc* setae. Those with three run out at couplet 10, q.v.]

- 8. Facial ridges bare. Abdomen without median discal setae on T3 and T4. Two *prst dc* setae 9
- Facial ridges with sparse proclinate setae on at least the lower half. Abdomen with median discal setae on T3 and T4. Three *prst dc* setae. [♂ with two pairs of proclinate orbital setae. Ocellar setae strong. Three *stpl* setae, of which ventral one unusually long and strong and subequal in size to upper anterior one. Mid tibia with *v* seta and with two strong *ad* setae. Hind coxa bare posterodorsally. Wing with bend of *M* remote from wing margin and last section of *Cu*₁ conspicuously longer than *m-cu*. Abdominal T3 with a row of

- four extremely strong erect median marginal setae. ♀ with a small sharply pointed and downcurved ovipositor] **Intrapales** Villeneuve
[One species: *I. remotella* Villeneuve, tropical Africa, description in Villeneuve (1938b:8–9).]
9. Hind coxa bare on the posterodorsal surface. Mid tibia with a submedian ν seta (except in *Thelyconychia delicatula*). Interfrontal area well developed, usually subequal in width to parafrontal (narrower in some *Lubutana*). Body colour not rather uniformly silver-grey. 10
- Hind coxa with a long fine setula on the posterodorsal surface. Mid tibia without a submedian ν seta. Interfrontal area virtually obliterated by very wide meeting parafrontals (δ) or a narrow strip only about half as wide as a parafrontal (ν). Body conspicuously pale silvery grey to naked eye, frons and thoracic dorsum unusually thickly and evenly covered with silver pollinosity. [Frontal setae exceptionally few, only 2–3 pairs on lowermost quarter of frons, lowermost of the two pairs of reclinate orbital setae situated at mid-height of frons; δ with two pairs of proclinate orbital setae. Ocellar setae absent or almost so. Two or three *stpl* setae. Mid tibia with one *ad* seta. Abdomen without discal setae on any tergite] **Hypersara** Villeneuve
[One species: *H. argentata* Villeneuve, tropical Africa, description in Villeneuve (1935:139–140).]
10. Small forms (length 4,5–5,5 mm) with subovate abdomen and dull blackish ground colour largely obscured by pale yellow or yellowish-grey pollinosity. Frontal setae mainly reclinate, together with reclinate orbital setae the frons therefore showing a continuous series of reclinate setae on most of its height. Antennae short, third segment less than three times as long as second
Thelyconychia Rondani
[Two species: easily differentiated by following characters: *T. solivaga*—mid tibia with submedian ν seta, 4 *stpl* seta, ocellar setae very weak, abdominal T1+2 without median marginal setae, δ without proclinate orbital setae; *T. delicatula*—mid tibia without submedian ν seta, 3 *stpl* setae, ocellar setae very strong, abdominal T1+2 with a pair of erect median marginal setae, δ with two pairs of proclinate orbital setae.]
- Larger forms (length 7–9,5 mm) with subfusiform abdomen and generally shining black colour (abdomen with narrow basal bands of silver pollinosity on T3 and T4, sometimes also T5). Frontal setae not reclinate. Antennae long, almost reaching epistome and third segment about 4–6 times as long as second segment. [Humeral callus with two setae, occasionally small third mesad of main two and then the three in shallow triangle. Scutellum with varied complements of marginal setae, either apicals or basals or both sometimes absent, or basals present but laterals absent. Two or three *stpl* setae. Mid tibia with ν seta and one *ad* seta. Hind coxa bare posterodorsally. Wing either with very few setulae confined to basal node of R_{4+5} , or with setulae on this vein extending almost to *r-m* (in latter case vein R_1 also with at least one and usually many setulae). Usually only one pair of *post acr* setae].
Lubutana Villeneuve¹
[Three species: no available identification key but differences discussed by Mesnil (1955:362–363).]

¹ Members of this genus have much the facies of minthoines or thelairines and it is not certain that the genus has affinities with Carceliini. *Lubutana* was placed in this tribe by Mesnil (1944:25) and this placement accepted for cataloguing purposes (Crosskey 1980:866). Although the pre-alar seta is large as in many Goniinae the possibility that *Lubutana* is phyletically mispositioned in this subfamily should be noted. Females of *Lubutana* show some flattening of the fore tarsi much as in many of the females of Minthoini.]

XXVIIa. Key to Afrotropical subgenera of *Carcelia*

1. Eyes haired 2
- Eyes bare.¹ [Two *stpl* setae. Fore tibia with one *pv* seta. Mid tibia with one *ad* seta. Hind coxa with long fine setula on its posterodorsal margin. Abdominal T3 and T4 without discal setae] 4
2. Mid tibia without submedian *v* seta. Hind coxa bare on its posterodorsal margin. Humeral callus with its three main setae standing in line. [Ocellar setae strong. Two *stpl* setae. Propleural seta absent or very weak. Subapical scutellar setae standing very widely apart. Upper occiput without black setulae behind postocular row. Abdominal T3 and T4 without discal setae] ..

Senometopia Macquart

[Seven species: no identification key and a very difficult group in much need of revision, containing several closely allied species usually identified in the past as '*Carcelia evolans* Wiedemann'. Certainly several undescribed species additional to the seven named.]

- Mid tibia with a submedian *v* seta. Hind coxa with a long fine setula (sometimes doubled) on its posterodorsal margin (Fig. 141). Humeral callus with three main setae (sometimes the only three) standing in a triangle ... 3
3. Intermediate abdominal tergites each with a pair of erect median discal setae. [♂ with two pairs of proclinate orbital setae. Ocellar setae strong. Upper occiput without black setulae behind postocular row. Parafacial extremely narrow, about one-quarter as wide as third antennal segment. Base of wing vein *R*₄₊₅ with setulae (about seven or eight) extending one third of the way from node to *r-m*] **Euryclea** Robineau-Desvoidy

[One species: *C. (E.) setifrons* Mesnil, tropical Africa, description in Mesnil (1949a:90–91).]

- Intermediate abdominal tergites without discal setae (except occasionally some stubby setulae in discal position on T4). [♂ with or without proclinate orbital setae. Ocellar setae usually strong. Upper occiput without black setulae behind postocular row (? some exceptions). Two or three *stpl* setae. Apical scutellar setae either horizontal or directed upwards. Mid tibia with either one or more than one *ad* setae. Basal node of wing vein *R*₄₊₅ usually with only 1–3 small setulae] **Caricelia** Mesnil

[Twenty-one species: a large and very difficult group with many additional undescribed species and in much need of comprehensive study. No useful keys at present.]

4. Ocellar setae very strong. Upper occiput with many irregular black setulae behind the postocular row. Scutellum with a pair of discal setae and with one pair of lateral setae. Propleural seta very strong. Humeral callus with its three main setae standing in a triangle. [Mid tibia with submedian *v* seta]

Thelymyiops Mesnil

[One species: *C. (T.) coniformis* Villeneuve, tropical Africa, description in Mesnil (1950b:10).]

- Ocellar setae very weak or absent. Upper occiput without black setulae behind the postocular row. Scutellum without discal setae and with two pairs (? sometimes only one) of lateral setae. Propleural seta absent. Humeral

¹ In *Thelymyiops* some very short and sparse hairs visible with careful examination.

callus with three setae standing in a straight line. [Mid tibia with a submedian ν seta (but ? holotype, not seen and not clear from description)].

***Carcelia* Robineau-Desvoidy s. str.**

[One species: *C. (C.) nudioculata* Villeneuve, tropical Africa, descriptions in Villeneuve (1938b:4) and Mesnil (1950b:20, as *Argyrophylax*). This Afrotropical species of *Carcelia* s. str. is unusual for the subgenus in having bare eyes; in the non-Afrotropical species the eyes are haired as is general in *Carcelia* s.l.]

XXVIII. Key to genera of Sturmiini in tropical and southern Africa

[Note. This is a large and difficult group in which individual specimens may fail to show the typical key characters with more frequency than is usual. As the key cannot cover every variation in the chaetotaxy that might be found the user should note that in genera where one pair of reclinate orbital setae is the norm two pairs may occur sometimes in females, and that in genera where three *stpl* setae is usual the occasional female may show four. The first selected key cut, eyes bare versus eyes haired, is a useful practical distinction between non-phyletic groupings of genera, but it should be noted that 'bare-eyed' forms may show some very minute and very sparse eye hairing if examined under high magnification; in 'hairy-eyed' forms the hairing is obvious immediately at normal low magnifications.]

1. Eyes haired 2
- Eyes bare or virtually so 5
2. Facial ridges with strong downcurved setae on almost their whole height. [One pair of reclinate orbital setae. Three *stpl* setae. Apical scutellar setae horizontal. Mid tibia with two or more *ad* setae. Forms sometimes either with bare prosternum or hairing on posterodorsal surface of hind coxa or with small median discal setae on abdominal intermediate tergites. Varied forms with rather rotund abdomen, often shining black or violaceous black but forms with tessellate *Sarcophaga*-like or with largely red abdomen occurring. Legs usually black but partially reddish-yellow in a few species]

***Pales* Robineau-Desvoidy**

[Twenty-seven species: a large and difficult genus for which no available key and much need of revision. Probably several undescribed African species. One species described from Madagascar.]

- Facial ridges bare (except for the usual few small setulae near the vibrissae) 3
3. Parafacials finely haired on their whole height. Body dark metallic green or blue. [One pair of reclinate orbital setae in ♂, second smaller pair present in front of main pair in ♀. Ocellar setae absent. Four *stpl* setae. Apical scutellar setae strong, crossed and horizontal. Mid tibia with two *ad* setae]

***Ptilocatagonia* Mesnil**

[One species: *P. viridescens* Mesnil, tropical Africa, description in Mesnil (1956b:79–80). The facies of this species is very like that of *Sisyropa*, in which genus it was originally described, but the puparium is remarkable: the posterior spiracles form a pair of well separated very large subspherical bosses (very conspicuous to naked eye), a spiracular structure possibly unique in Sturmiini.]

- Parafacials bare. Body not dark metallic green or blue (except in *Sisyropa insolita*) 4
4. Two pairs of reclinate orbital setae. Hind coxa setulose on posterodorsal surface (Fig. 141). Three *stpl* setae. Abdominal T3 and T4 with several irregular erect and stubby discal setae and setulae standing on the mid-line of the abdomen. Abdominal ground colour almost entirely reddish-yellow, at most only black apically and along the mid-line. [Ocellar setae extremely strong. Facial ridges more or less distinctly visible on their whole height

seen in profile. Apical scutellar setae crossed and nearly horizontal. Mid tibia with two or more *ad* setae] **Calozenillia** Townsend

[Two species, distinguishable as follows: *C. africana* (only ♂ holotype known) with black occipital setulae behind postocular row, frons with series of erect setae outside frontal rows, antennae all dark, lateral and apical scutellar setae very fine, and coxae and femora dark brown; *C. perlucida* without black occipital setulae behind postocular row, frons without such extra setae, antenna with second segment reddish yellow, lateral and apical scutellar setae strong, and coxae and femora reddish-yellow.]

- One pair of reclinate orbital setae. Hind coxa bare on posterodorsal surface. Four *stpl* setae (except in *S. insolita* with two or three, but then colour all dark metallic green and arista with very long pubescence). Abdominal T3 and T4 without median discal setae. Abdominal ground colour not reddish yellow **Sisyropa** Brauer & Bergenstamm (part)

[Running out here are the hairy-eyed members of the genus *Sisyropa*, for which revision needed. Includes *argyrata*, *insolita* and *subdistincta* from Afrotropical mainland, *yeburyi* from South Yemen, and also unrecognised specimens (probably undescribed spp.) from Nigeria (BMNH).]

- 5. Head with one pair of reclinate orbital setae. [Parafacials bare. Four *stpl* setae (except only two in ♂ but not ♀ of *Sturmia lindneri*). Wing with more than one setula on basal node of vein R_{4+5}] 6
- Head with two pairs of reclinate orbital setae (exceptionally a supernumerary third pair present) 8
- 6. Scutellum with apical setae extremely weak and directed upwards; subapical scutellar setae not widely separated, distance between their bases not more than that between a subapical seta and its corresponding basal seta

Sisyropa Brauer & Bergenstamm (part)

[Running out here are the *Sisyropa* species with bare or nearly bare eyes, other than *S. stylata* (couplet 7). Included are *boveyi* and *negator* and probably some undescribed species.]

- Scutellum with apical setae strong and almost horizontal; subapical scutellar setae usually separated by a distance at least slightly greater than that between a subapical seta and its corresponding basal seta 7
- 7. Abdomen with last visible tergite (T5) truncate and much shorter than T4. Antennal axis about level with eye middle and antennae correspondingly short (third segment not more than about 2.5 times as long as second segment). Scutellum with one pair of lateral setae (if trace of second pair then extremely weak). Arista with second segment not at all elongate. ♂ abdominal T4 on its flanks and venter with areas of long dense recumbent hair. .

Sturmia Robineau-Desvoidy

[Three species; also additional undescribed species and no available key (revision much needed). Additional species in Madagascar.]

- Abdomen with T5 subconical and about equal in length to T4. Antennal axis conspicuously above level of eye middle and antennae correspondingly long (third segment about four times as long as second segment). Scutellum with two pairs of well-developed lateral setae (the larger pair extremely strong and subequal in size to the basals). Arista with second segment distinctly elongate, about 2.5–3 times as long as its width. ♂ abdominal T4 without secondary sexual hair patches *Sisyropa stylata* Townsend

[Running out here is this one bare-eyed species of *Sisyropa* that does not readily key out with its congeners.]

8. Humeral callus with four setae, a basal straight row of three and one set forwards (ie. normal configuration for *Sturmiini*). Second supra-alar seta long and strong, subequal in size to or larger than the pre-alar seta. Four *post dc* setae. Mid tibia with submedian ν seta 9
- Humeral callus with only three setae standing in a straight line (innermost one sometimes so weak that only two definitely present). Second supra-alar seta very weak, shorter and finer than the pre-alar seta (sometimes missing completely in males). Usually four *post dc* setae but often three when the usual second *post dc* is hair-like or missing (leaving a gap between first and third). Mid tibia often without submedian ν seta. [Parafacials small, narrower at mid-point than width of third antennal segment. Ocellar setae strong. Three (or rarely two) *stpl* setae. Apical scutellar setae horizontal. Mid tibia with one *ad* seta (very rarely no *ad*). Thoracic dorsum black or violaceous, abdomen black with ground colour often overlaid on T4 and T5 with thick white or yellow pollinosity. Small or very small forms, length 2,5–8 mm]

Cadurcia Villeneuve

[Nine species: incomplete key in Mesnil (1952b:214) and revision needed. Additional species in Mauritius and Réunion but genus apparently unrecorded from Madagascar.]

9. Three *stpl* setae (usually only two in *Thelairodrido*) 10
- Four *stpl* setae 14
10. Head seen in profile distinctly subtriangular and with the facial ridge conspicuously visible in front of the parafacial on its whole height; epistome much receding in relation to profrons and usually not visible in front of vibrissal insertion. Arista usually thickened on at least half its length. [Facial ridges bare. Parafacials bare (except sometimes with some hairs on extreme upper ends) and not narrowing ventrally. Ocellar setae strong. Mid tibia with two or more *ad* setae. Abdomen of δ without the hairing of T4 modified into dense hair-patches] **Pexopsis Brauer & Bergenstamm**

[Five species: no available identification key.]

- Head seen in profile not distinctly subtriangular and with facial ridge invisible or exposed only at lower end towards vibrissa; epistome only weakly receding in relation to profrons and usually visible in profile in front of vibrissal insertion. Arista usually only thickened on about the basal quarter or third (occasionally for half its length) 11
11. Ocellar setae very strong, as large as or larger than the reclinate orbital setae. Parafacials bare 12
- Ocellar setae absent or very small, usually *much* weaker than the reclinate orbital setae (if nearly as large then parafacials with some hairing or facial ridges setose). Parafacials usually haired either on their upper ends or on most of their height, if bare then facial ridges setose 13
12. Mid tibia with one completely isolated *ad* seta [? all species]. Parafacial narrow, about equal in width to third antennal segment. Normally two *stpl* setae (but three occurring) **Thelairodrido Mesnil**

[Three species: two separable by couplets 1–6 in key by Mesnil (1954:470) to *Thelairosoma* which includes *T. cardinalis* and *T. anaphe*. A third species, *potina*, included in *Thelairodrido* by Crosskey (1980:874) on balance of characters but the holotype (only known specimen) appears to be aberrant as it has only one pair of reclinate orbital setae.]

- Mid tibia with one strong *ad* seta accompanied by one or more small but distinct additional *ad* setae basad of the main one. Parafacial unusually broad, at mid-point about as wide as the *length* of the third antennal segment. Three *stpl* setae (four occur: see couplet 16). [Large forms, length 11–21 mm]

Pimelimyia Mesnil

[Six species: no useful key and revision needed. One additional species in Madagascar (*P. insularis*) with rather *Pexopsis*-like head shape and a few hairs on upper ends of parafacials.]

- 13. ♂ head with proclinate orbital setae. Ocellar setae absent. Parafacials haired on their whole height. [*Puparium with large flat subcircular posterior spiracles flush with the surface and with extremely serpentine spiracular slits*]

Afrostormia Curran

[One species: *A. orbitalis* Curran, Ghana, description in Curran (1927b:126–127). The adult facies of this species is entirely that of *Blepharella* s.l., but *Afrostormia* is maintained as a valid genus because of the very unusual posterior puparial spiracles (of a kind that I have not seen in other sturmiines).]

- ♂ head without proclinate orbital setae. Ocellar setae present or absent. Parafacials bare or haired. [Forms with varied appearance, many with thick golden pollinosity and a green body pigmentation in life, a few species distinctive because of the wings being coloured yellow basally and smoky brown medially. Prosternum sometimes bare (*B. setigera* Corti complex)¹ *Puparium with posterior spiracles forming a pair of very strongly projecting trifid bosses (but known for only a few species)*] **Blepharella** Macquart

[Forty species: a very richly developed and difficult group in much need of revision. No useful keys and certainly many undescribed species. Group widely known in former literature as *Congochrysosoma* or as part of *Sturmia* sensu Curran (eg. Curran 1927b).]

- 14. Ocellar setae strongly developed, subequal in length to or even stronger than the reclinate orbital setae 15
- Ocellar setae weak or absent, when present shorter and weaker than the reclinate orbital setae and often very short, fine and wiry 17
- 15. Apical scutellar setae directed almost straight upwards. [Occiput without irregular black setulae behind postocular row. Scutellum with one pair of lateral setae. Wing with three or more fine setulae on basal node of vein R_{4+5} . Abdomen of ♂ with hairing of T4 not modified into any form of hair-patch or fascicle. *Puparium with posterior spiracles flush to surface and with serpentine slits*] **Paradrino** Mesnil

[One species: *P. halli* Curran, eastern and southern Africa, descriptions in Curran (1939:2–3, as *Sturmia*) and in Jones (1939:16–19, as *Sturmia rhodesiensis*).]

- Apical scutellar setae horizontal or nearly so 16
- 16. Wing with one setula on basal node of vein R_{4+5} . Ocellar setae inserted directly beside or distinctly in front of the anterior ocellus. Small species, length 5–10 mm. [*Puparium with posterior spiracles in form of two widely separated and slightly trifid projections with simple slits*] . . . **Zygothria** Mik

[Two species: *Z. atropivora* and *Z. ciliata* distinguished by former with two *ad* setae on mid tibia and no black occipital setulae behind postocular row and latter with one *ad* seta on mid tibia and presence of black occipital setulae. Descriptions in Mesnil (1951:168–169, *ciliata* as *convergens* Wiedemann by misidentification).]

¹ *Blepharella setigera* Corti from the Afrotropical region is only doubtfully distinct from *B. lateralis* Macquart from the Oriental region, which also has the prosternum bare. Revision of *Blepharella* with bare prosternum on a palaeotropical basis is needed.

- Wing with at least two and usually three or more small setulae on basal node of vein R_{4+5} . Ocellar setae usually inserted distinctly behind level of anterior ocellus (never in front). [*Puparium with posterior spiracles flush with surface, slits simple*] **Pimelimyia** Mesnil (part)
 [Running out here are some females which show four *stpl* setae instead of the three usual for the genus.]
- 17. Wing with one setula on basal node of vein R_{4+5} 18
- Wing with at least two and usually three or more setulae on basal node of vein R_{4+5} 19
- 18. Parafacials completely bare. Ocellar setae absent. Each side of venter of abdominal T4 in the ♂ with unmodified hair or with a large area of short fine hair that is not formed into a definite fascicle . . . **Drino** Robineau-Desvoidy
 [Two species: no African material seen, *D. lota* recorded from Tanzania by Mesnil (1959:8) and *D. facialis* from Zaïre by Verbeke (1962b:51), both species Eurasian and confirmation of identity in Africa needed. Descriptions of both species in Mesnil (1951:163–166).]
- Parafacials finely haired on upper parts, hair sometimes extending on to lower parts, occasionally only a few minute hairs immediately below lowest frontal seta but parafacials never entirely bare. Ocellar setae present, very weak and wiry. Each side of venter of abdominal T4 in the ♂ with a definite fascicle of long dense hair (Figs 132–133), the hair-fascicles ranging in size from a small inconspicuous tuft only half as long as its tergite to a large area covering the whole half-venter. [Upper occiput with or without irregular black setulae behind postocular row. Scutellum with two pairs of lateral setae differentiated (one sometimes very weak) and with very small apical setae. Mid tibia with one submedian *ad* seta. *Puparium with posterior spiracles in form of prominent trifid bosses with simple slits*] **Palexorista** Townsend
 [Twenty-five species: no available identification key. Additional species recorded from Madagascar and Mauritius. A large group in much need of revision, some species common to Oriental region for which revision and key (including the Afro-Oriental species) available (Crosskey 1967).]
- 19. Parafacials and facial ridges bare. Wing with vein Cu_2 (sixth vein) clearly traceable to the wing edge **Sturmia lindneri** Mesnil (female)
 [Females of *S. lindneri* have two pairs of well-developed reclinate orbital setae (of which size subequal) instead of one as in males. Males have two *stpl* setae (exceptionally also small third) instead of four as in females and will exit as the exceptional species cited in first half of couplet 5 q.v.]
- Parafacials usually haired on upper parts (occasionally on whole), but if bare then facial ridges partially or wholly setose. Wing with vein Cu_2 stopping well before wing edge **Blepharella** Macquart (part)
 [Running out here are female specimens of *Blepharella* that have four *stpl* setae in contrast to the usual three in males and sometimes in females.]

XXIX. Key to Afrotropical genera of Goniini

[*Note.* The genera covered by this key have an exceptionally wide head (Fig. 82), strong reclinate ocellar setae, bare eyes, strong outer vertical setae in males as well as females, humeral callus with only three setae (these standing in line), 3 + 4 *dc* setae, and the scutellar tip with one pair or more of strong erect spiniform setae (set between and slightly above the subapicals).]

1. Parafacials with vestiture formed by long strong sparse hairing or long setulae (when strong sometimes forming a definite row of setae near the facial

- ridges). Facial ridges bare. Scutellum with lateral setae. Four or more *stpl* setae. Arista thickened on much more than half its length (usually almost or completely to the tip) and with the second segment exceptionally long (about 5 or 6 times as long as broad) 2
- Parafacials bare. Facial ridges setulose. Scutellum without lateral setae. Three *stpl* setae. Arista thickened on about half its length or at most only slightly more, with the second segment about 2.5–3 times as long as broad. [Head as in Fig. 82] **Goniophthalmus** Villeneuve
 [One species: *G. halli* Mesnil, widespread, description in Mesnil (1956a:548). A second species (*G. simonyi* Villeneuve) occurring in Socotra, description and identification key for *halli* and *simonyi* in Mesnil (1956a:548–549).]
2. Wing with setulae on base of vein R_{4+5} extending about half way to *r-m*. ♂ with proclinate orbital setae. Genal hair mostly or entirely yellowish white. Abdominal ground colour almost all reddish orange or this colour at least very broadly on T1+2 to base of T4 **Gonia** Robineau-Desvoidy
 [Two species, but names possibly synonymous. *Gonia rubriventris* Macquart, known only from ♀ holotype (BMNH), South Africa, perhaps not distinct from the widespread *G. bimaculata* Wiedemann. Holotype of *rubriventris* has black abdominal colour confined to a single posteromedian spot on T3 and T4 and to the apical half of T5, whereas ♀ of *bimaculata* usually has at least whole posterior half of T4 and all of T5 black. No specimens agreeing exactly with abdominal colouring of *rubriventris* have been seen amongst long series of *bimaculata* examined and *rubriventris* maintained as valid pending further evidence.]
- Wing with setulae on base of R_{4+5} few and confined to the node. ♂ without proclinate orbital setae. Genal hair black. Abdominal ground colour all black **Pseudogonia** Brauer & Bergenstamm
 [Two species: identification key to these, and one additional species from Madagascar, in Mesnil (1956a:533, as *Isomera* and with *P. rufifrons* as *I. cinerascens*). The genus *Pseudogonia* is poorly differentiated from *Gonia* and its species should probably be better regarded as forming a species-group within *Gonia* when the group is comprehensively revised.]

XXX. Key to Afrotropical genera of Eryciini

[Note. As in earlier works (Crosskey 1973b, 1976) the Eryciini as here treated is a convenience group for a miscellany of genera not readily assignable elsewhere. All included genera have a submedian *v* seta on the mid tibia and all except *Metoposisyrops* have the abdominal T1+2 excavate to the hind margin or virtually so.]

1. Eyes haired (the hairing obvious at first sight even if short) 2
- Eyes bare (some minute and sparse hair sometimes evident at high power examination) 12
2. Three *post dc* setae 3
- Four *post dc* setae 4
3. Facial ridges with strong downcurved setae on most of their height. Upper occiput with irregular black setulae behind postocular row. Wing vein *M* with bend and extending to wing margin (as normal). Apical scutellar setae directed moderately to strongly upwards. Intermediate abdominal tergites each with a pair of erect median discal setae. Hind tibia with three dorsal preapical setae (*pd* preapical present). Body colour usually metallic green to violet **Chlorolydella** Townsend (part) & **Phryxe** Robineau-Desvoidy
 [Running out here are *Chlorolydella* species with three instead of the usual four *post dc* setae, and also *Phryxe setinervis* Mesnil (the only Afrotropical species assigned as yet to *Phryxe*).

This nondescript blackish species, and also the violaceous *Chlorolydella violacea* Curran which runs out here, differ from typical *Chlorolydella* species in having the setulae of wing vein R_{4+5} extending more than half way along towards $r-m$, the costal spine strongly developed (as long as $r-m$), and the *ad* preapical seta of the fore tibia unusually strong. Thus there is no tangible distinction between *Phryxe* and *Chlorolydella*, and the latter genus ought probably to be sunk within a widened concept of the former. For present purposes I accept Mesnil's placement of *setinervis* in *Phryxe* whilst calling attention to the need for revision of the forms concerned. See also couplet 9.]

- Facial ridges bare. Upper occiput without black setulae behind postocular row. Wing vein *M* stopping abruptly at position where the bend of *M* would normally be, the last section (M_1) completely absent. Apical scutellar setae horizontal. Intermediate abdominal tergites without discal setae. Hind tibia with two dorsal preapical setae (*pd* preapical absent). Body not metallic. [Abdomen of ♂ with a large area of very fine and short close hairing on each side of venter of T3 and T4, Fig. 129] '*Nealsomyia*' *lindneri* Mesnil
 [Species known only from holotype, description in Mesnil (1959:12-13), Tanzania. See also entry for species in key XXXI. Generic placement questionable and *lindneri* generically unassigned in Crosskey (1980:881).]
- 4. Facial ridges with setulae or strong setae on at least half their height. Two or three *stpl* setae (sometimes four in *Pseudoperichaeta*) 5
- Facial ridges bare. Usually four *stpl* setae (variably 3-5 in *Gaedioxenis haematodes*) 10
- 5. Two *stpl* setae. Parafacials covered with long fine close hair (hairing in ♂ continuous with similar fine hairing on genal dilations, in ♀ separated from genal hair by narrow bare gap). [Eye hair short and rather sparse. Setulae of facial ridges weak and confined to lower half or so. Scutellum with two pairs of lateral setae and with the apical setae directed upwards. Mid tibia with two *ad* setae. *Puparium with posterior spiracles small and flat, flush with surface and with serpentine slits*] **Sturmiopsis** Townsend (part)
 [Two species: running here is one species *S. parasitica* Curran, widespread, description in Curran (1939:3, as *Rhodesina*). The second species with bare eyes, see couplet 19.]
- Three *stpl* setae (exceptionally only two differentiated in *Pseudoperichaeta* but then parafacials bare). Parafacials either bare or with vestiture consisting of strong setae or stiff setulae mainly confined to upper parts (except in *Pseudoperichaeta leo* with fine hair on uppermost part, and *Pretoriana setosa* with strong setae coming low down on parafacial) 6
- 6. Mid tibia with one isolated submedian *ad* seta. Facial ridges with setulae or small fine setae that usually do not extend above half or three-fifths of the height of the ridges 7
- Mid tibia with two or more *ad* setae. Facial ridges with very strong and conspicuous setae on more or less their entire height 8
- 7. Sternopleural setae in normal arrangement of 2 + 1. Apical scutellar setae crossed and horizontal, well developed and subequal in size to lateral setae. Second *sa* seta strong, subequal in size to *pra* seta. Body colour black but with extensive pale pollinosity, thoracic dorsum vittate (prescutum with two pairs of well-defined black vittae, scutum with sublateral pair and a narrow median black vitta, scutellum with median black vitta), abdomen with tessellate appearance as fly is turned. [♂ with two pairs and ♀ with one pair of

reclinate orbital setae. *Puparium with posterior spiracles unmodified, flush to surface and with simple straight slits*] **Schembria** Rondani

[Running out here are specimens from South Africa that evidently represent an undescribed species assignable to *Schembria*, a genus hitherto with one species (Palearctic). See Mesnil (1975a:1380–1381).]

- Sternopleural setae in exceptional arrangement of 1 + 2 (but two or four *stpl* occurring in occasional specimens). Apical scutellar setae very small and directed distinctly upwards, normally much smaller than lateral setae. Second *sa* seta usually rather weak and smaller than *pra* seta. Body not vittate or tessellate in appearance, uniformly black and rather shining (except *P. leo* in which abdominal ground dark orange-red laterally). [*Puparium with posterior spiracles very small, flush to surface and with straight slits*]

Pseudoperichaeta Brauer & Bergenstamm

[Five species: no available identification key and revision needed as probably some undescribed species. One additional species in Madagascar.]

- 8. One pair of reclinate orbital setae. Scutellum without lateral setae. Upper occiput without black setulae behind postocular row. Eye hair short and sparse. [Parafacials bare. Hind tibia with two dorsal preapical setae, *pd* preapical absent] **Dolichocolon** Brauer & Bergenstamm (part)

[Running out here are specimens (BMNH) of an undescribed species differing from all described *Dolichocolon* species in having distinctly haired eyes. See couplet 26.]

- Two pairs of reclinate orbital setae (upper pair occasionally missing or hair-like in *Chlorolydella*). Scutellum with lateral setae. Upper occiput with black setulae behind the postocular row. Eye hair long and moderately to very dense (extremely obvious especially in *Chlorolydella*) 9

- 9. Parafacials bare. Abdomen with erect median discal setae on T3 and T4. Apical scutellar setae nearly always directed almost straight upwards, crossing or at least converging. Hind tibia with or without *pd* preapical seta. [Mainly bright metallic green species, but dull bluish-black or black species occurring; legs usually black but tibiae and sometimes also femora reddish yellow. *Puparium (known only for C. pallidipes) has posterior spiracles in form of short but obvious prominences with simple slits*]

Chlorolydella Townsend (part)

[Eleven species (those with three *post dc* setae included; see couplet 3): several undescribed species, no available key and revision much needed. Homonymy problem of three separate nominal species named *metallica* to be resolved when genus revised. Status of genus in relation to *Phryxe* Robineau-Desvoidy in need of clarification: see annotation in couplet 3.]

- Parafacials with conspicuous and strong vestiture, either setulose at least at their upper ends or with strong setae down most of their height. Abdomen without median discal setae on T3 and T4 (except sometimes some weak discals on T4). Apical scutellar setae more or less horizontal, crossed. Hind tibia with three dorsal preapical setae (*pd* preapical present). [Black species. Head profile eg. Fig. 66] **Pretoriana** Curran

[Four species: no available identification key and revision needed. Genus so far as known confined to South Africa where further species almost certainly occur. Note: holotype of *Pretoriana maculosa* Villeneuve has the eyes badly rubbed and spuriously appearing bare at first sight.]

- 10. Parafacials bare. Wing with cell *R*₅ open to wing margin. Mid tibia with not more than two strong *ad* setae, usually only one. Upper occiput without

black setulae behind the postocular row. Head without strong setae directed outwards over the eyes 11

- Parafacials with long stiff sparse setulae. Wing with cell R_5 short-petiolate (petiole about two-thirds as long as $r-m$). Mid tibia with at least four strong setae. Upper occiput with irregular black setulae behind the postocular row. Head with a pair of *very* strong setae on each parafrontal that curve outwards over the eye. [Abdominal T3 and T4 with discal setae. Abdomen orange-red on flanks and broadly black on the mid-line, apex black]

Gaedioxisen *haematodes* Villeneuve

[South African species differing from other *Gaedioxisen* (see couplet 21) in having sparse but moderately long eye hair.]

11. Wing with one exceptionally long strong curved setula on basal node of R_{4+5} . Abdominal T1+2 without median marginal setae. Apical scutellar setae weak and directed distinctly upwards, usually subparallel or convergent and only occasionally crossing. Antennal axis about level with eye middle. [*Puparium with posterior spiracles in form of remarkable large protuberant truncate-subconical bosses positioned close together and appearing to have a closely rugose or thorny surface (without normal serpentine or straight slits)*]

Cadurciella Villeneuve

[Two species: no key and revision needed as some specimens (BMNH) appear to represent closely allied undescribed species.]

- Wing normally with at least two small setulae on basal node of R_{4+5} (if only one then small and other characters not fitting). Abdominal T1+2 with a pair of median marginal setae (sometimes undifferentiated in ♂). Apical scutellar setae crossed and horizontal, often very strong. Antennal axis above level of eye middle. [*Puparium with posterior spiracles not forming projecting bosses, with serpentine slits on three discrete flat plaques that are more or less flush with surface or (in A. metallica) slightly recessed*]

Aplomya Robineau-Desvoidy

[Six species: no available key and revision needed as material available (BMNH) shows that there are several undescribed species very similar to described ones but with distinct genitalia. One additional species in Madagascar.]

12. Wing venation normal and complete, vein M with bend and reaching the wing edge or the petiole (when present) and crossvein $m-cu$ present 13
- Wing venation aberrant, vein M without bend and stopping where bend would normally be, crossvein $m-cu$ absent. [Abdomen uniformly orange or red and with very weak setae. Face deeply excavate and epistomal margin recessed between vibrissae, antennae very long. Facial ridges prominent and weakly setulose on whole height. Parafacials bare. Humeral callus with three setae in line. Four *post dc* setae. Scutellum with two pairs of lateral setae and parallel horizontal apicals. Mid tibia with one *ad* seta. Hind tibia with small *pv* apical seta. Second costal sector haired ventrally. Wing vein R_{4+5} with setulae extending as far as $r-m$. ♂ with two pairs of proclinate orbital setae. *Puparium with posterior spiracles in form of extremely prominent slightly bifid mushroom-shaped boss with conspicuous neck*] *Phytomyterina* Emden

[One species: *P. rufescens* Villeneuve, South and East Africa, description in Emden (1960:356-358, as *burtti*). Emden described the genus in his 'Helocerini' which otherwise included only

Glaurocara. Despite the *Glaurocara*-like posterior puparial spiracles and the presence of a small *pv* apical seta on the hind tibia (unusual in *Goniinae*) the affinities of *Phytomypterna* are here considered to lie with the *Erythrocer*a-group of genera in *Eryciini*.]

13. Three *post dc* setae 14
- Four *post dc* setae 17
14. Humeral callus with three setae standing in a shallow but distinct triangle. [Facial ridges setose on most of their height. Parafacials bare] 15
- Humeral callus with three setae standing in a straight line, sometimes also with a fourth seta set forwards from the main line of three 16
15. Wing cell *R*₅ open. Apical scutellar setae directed upwards (very strong). Three *stpl* setae. Gena with a distinct haired genal dilation, at least on the part close to the peristome. Abdomen of ♂ without hair-fascicles. Palpi dark brown or black **Antistasea** Bischof

[Three species (one probably invalid): distinctions between *A. mutans* and *A. fimbriata* cited by Mesnil (1970:106), *A. discalis* almost certainly synonymous with *fimbriata*.]

- Wing cell *R*₅ closed and petiolate, the petiole about twice as long as *r-m*. Apical scutellar setae horizontal. Two *stpl* setae. Gena without dilation, bare between lowermost point of eye and the peristome. Abdomen of ♂ with a pair of very large fascicles of long dense hair on venter of T4 (together almost covering whole ventral surface of this tergite). Palpi yellow **Diaprochaeta** Mesnil

[One species: *D. illustris* Mesnil, Zimbabwe, description in Mesnil (1970:104–105). Known only from ♂ holotype in Canadian National Collection, Ottawa.]

16. Wing cell *R*₅ with a short petiole about equal in length to *r-m*. Facial ridges with short stubby setulae on almost their whole height. Prosternum bare. Parafacials finely haired on upper parts. ♂ without proclinate orbital setae. [Antennae extremely long, third segment at least eight times as long as second. Arista thickened on its whole length. Frons extremely wide, with interfrontal area widening posteriorly. Pre-alar seta rather weak, subequal in size to first *post ia* and first *post dc*. Ground colour of body and legs black, abdomen rather evenly covered with thick ashy-grey pollinosity. Palpi yellow] **Undetermined genus**

[Running out here is a ♂ specimen from Angola (BMNH) for which the genus is questionable but which is apparently allied to the *Erythrocer*a-group of genera.]

- Wing cell *R*₅ at least narrowly open at wing margin. Facial ridges bare or with a few setulae on lowermost third only. Prosternum setulose. Parafacials bare. ♂ with two pairs of proclinate orbital setae **Erythrocera Robineau-Desvoidy (part)**

[Two species: *E. doris* and *E. porcula* of which former has wings brown anterobasally and latter has clear wings. Third species, *E. picta*, with four *post dc* setae runs out at couplet 25.]

17. Abdominal T1+2 not excavate to its hind margin. Head profile exceptionally strongly triangular, the profrons much wider than depth of gena (Fig. 72). Arista thickened on its whole length and with extremely long second segment (4–7 times as long as wide). Basal node of wing vein *R*₄₊₅ with one strong curved seta. Humeral callus with two setae. [One pair of reclinate orbital setae. ♂ with two pairs of proclinate orbital setae. Face deeply excavate. Second *sa* seta absent or hair-like. Two *stpl* setae. Apical scutellar setae

strong, directed upwards and crossed. Mid tibia with one *ad* seta. Second costal sector haired ventrally. Bend of vein *M* very abrupt and usually with short stub-like appendix. Abdomen subfusiform. *Puparium with posterior spiracles small, almost flush to surface and with slits only slightly sinuous*

Metoposisyrops Townsend

[One species: *M. sesamiae* Mesnil, tropical Africa, description in Mesnil (1968b:4, as *Metagonistylum*).]

- Abdominal T1+2 excavate to its hind margin. Head profile not exceptionally triangular, the profrons at most subequal in width to depth of gena and usually narrower. Arista usually not thickened on its whole length and usually with short second segment (note: mostly thickened in *Prosopodopsis* and *Brachychaetoides*, second segment conspicuously elongate in *Dolichocolon* and some *Prosopodopsis*). Basal node of wing vein *R*₄₊₅ with two or more small setulae (exceptionally only one but then not developed into a strong seta). Humeral callus with three or more setae (except only two in *Cestonia*) 18
- 18. Parafacials with hairing or setae of some kind on much or all of their height, often many strong, irregularly placed setae on the upper ends forming a continuous descending series with similar setae on parafrontals 19
- Parafacials bare 22
- 19. Two *stpl* setae. Mid tibia with two *ad* setae. Parafacials with long stiff but rather sparse hair on their whole height. One pair of reclinate orbital setae [? constant]. Intermediate abdominal tergites without discal setae. Palpi of ♀ in form of enormous short clubs. [Eyes with some minute sparse hairs visible under careful examination. Facial ridges finely setose on lower half. Antennae with long second segment subequal in length to third and reddish yellow. Upper occiput without black setulae behind postocular row]

Sturmiopsis angustifrons Mesnil

[This species has the eyes virtually bare and thereby differs from other *Sturmiopsis* (see also couplet 5).]

- Three or more *stpl* setae. Mid tibia with three or more distinct *ad* setae (always small *ad* additional to the main two). Parafacials haired or setose. Intermediate abdominal tergites with or without discal setae. Palpi of ♀ slender 20
- 20. Epistome prominent, curving forwards from the face between the vibrissal angles and visible in profile. Proboscis of normal size, mentum shaft-like and longer than the third antennal segment or the palpi. Humeral callus with the three main setae standing in a straight basal line (one additional seta set forwards of inner pair). Genal dilations not swollen and vestiture either hair-like or weakly setiform 21
- Epistome recessed, flat with the face and the margin sunk between the vibrissal angles, invisible in profile (Fig. 67). Proboscis unusually small, mentum boat-shaped and shorter than either the third antennal segment or the palpi. Humeral callus with three extremely strong setae standing in a triangle (the front one in an anterolateral position on the callus) and with two very fine inner additional setae (almost piliform). Genal dilations conspicuously swollen and with many strong forwardly directed setae. [Parafacials with a

- bunch of strong setae that form a continuous very irregular series with numerous similar strong setae on the parafrontals. Facial ridges rather flat and broad ventrally, setulose only on lowermost quarter or so. Three *stpl* setae. Apical scutellar setae extremely strong, subspiniiform, horizontal and divergent. Hind tibia with three dorsal preapical setae. Wing cell R_5 closed just before margin, costal spine long and strong. Abdomen rather rotund. Body and legs with black ground colour] **Hystricephala** Macquart
[One species: *H. nigra* Macquart, South Africa, no modern description.]
21. Facial ridges strongly setose on more than half their height, not very strongly widening ventrally in facial view. Parafacials bare at their lower ends and with several strong and irregularly disposed setae on the middle and upper parts (also some small hairs on the mid part near the lowermost setae). Both sexes with one or two pairs of strong setae on the parafrontals that curve outwards over the eye margins. Three *stpl* setae. Abdominal T3 and T4 with median discal setae. Scutellum with enormous lateral setae that are stronger than the basals and at least as large as the subapicals. Upper occiput without black setulae behind the postocular row. [Scutellum with strong erect or subhorizontal spiniiform setae in a discal and preapical position. Wing cell R_5 open] **Myxarchiclops** Villeneuve
[Two species, South Africa: differences noted by Villeneuve (1930:353) in description of *M. major*. Additional difference in ocellar setae, which are very strong and as large as the largest of the irregular reclinate orbital setae in *major* and weak and smaller than any of these setae in *caffer*.]
- Facial ridges bare (excluding the usual few setulae near vibrissae), strongly widening ventrally in facial view and virtually flat with the face. Parafacials finely haired on their lower ends, the upper ends with long stiff sparse setulae or bearing strong irregular frontal setae that extend unusually far down on the head; profrons in ♂ with a bunch of setae irregularly accompanying the frontal setae. Only ♀ with a pair of strong setae on parafrontals that curve outwards over eye margins. Four *stpl* setae. Abdominal T3 and T4 without definite median discal setae. Scutellum with lateral setae that are not larger than basal setae and at least slightly weaker than the subapicals. Upper occiput with irregular black setulae behind the postocular row. [Ocellar setae strong, as large as or larger than reclinate orbital setae. Wing cell R_5 open or with very short petiole] **Gaediogenis** Villeneuve (part).
[Four species (including *haematodes* at couplet 10): no available identification key and revision needed. See Villeneuve (1937:208) for head figures of *G. haematodes* and *G. setifrons*, but note figure of former inaccurate for showing eyes bare. Couplet characterization above excludes *haematodes* (run out at exit 10), which has outwardly directed parafrontal setae in ♂, strong median discal setae on abdominal T3 and T4, and has the lateral scutellar setae larger than basals.]
22. Wing cell R_5 petiolate, the petiole at least as long as *r-m* and usually much longer (Fig. 113). [Facial ridges bare or at most weakly setose on lowermost third. Upper occiput without black setulae behind the postocular row. Wing vein *M* with apical section (bend to petiole) very oblique and bend remote from wing edge; last section of Cu_1 very much longer than *m-cu*] 23
- Wing cell R_5 open or closed about at wing margin (except trace of a petiole in *Prosopodopsis pulchricornis*) 24

23. Antennal axis much above level of eye middle, facial profile longer than frontal profile and antennae correspondingly long (Fig. 69). Wing petiole not or only slightly longer than *r-m*, much shorter than *m-cu*. Interfrontal area subequal in width to or wider than parafrontal. Scutellum with short fine apical setae subparallel and horizontal. Mid tibia with two *ad* setae. Humeral callus usually with at least three distinct setae **Cestonionerva** Villeneuve
[One species: *C. petiolata* Villeneuve found in Palaearctic Africa and Middle East but described from Socotra. Good description in Mesnil (1953a:281–282).]
- Antennal axis not or hardly above level of eye middle, facial profile subequal to frontal profile and antennae correspondingly rather short (Fig. 68). Wing petiole much longer than *r-m*, usually subequal in length to *m-cu* (Fig. 113). Interfrontal area usually conspicuously narrower than parafrontal, especially in ♀. Scutellum with small, upwardly directed apical setae. Mid tibia with one *ad* seta. Humeral callus with two setae. [Either two *prst dc* setae or one strong one preceded by two very weak ones] **Cestonia** Rondani
[One species: *C. rutilans* Villeneuve, Senegal and Middle East, description in Mesnil (1953a:284–286). Two specimens of genus from Sudan (BMNH) may be *rutilans*, two from Namibia (BMNH) probably undescribed species.]
24. Head with one pair of reclinate orbital setae. [Ocellar setae present. Humeral callus with four setae, main three standing in straight line. Apical scutellar setae small and directed half-upwards or almost vertically (not known for *Erythrocyra picta* in which scutellum missing from only known specimen)] 25
- Head with two or more pairs of reclinate orbital setae (these usually standing behind one another and directed similarly backwards but sometimes out of line and somewhat straight erect rather than reclinate) 27
25. Mid tibia with at least two *ad* setae. Two or three *stpl* setae. Blackish-bodied forms with normal hyaline wings 26
- Mid tibia with one *ad* seta. Four *stpl* setae. Pale-bodied species with ground colour of lower parts of head, sides of thorax, most of abdomen and all of legs yellow or reddish yellow and with most of costal margin of wings dark smoky brown. [Facial ridges broadly visible in profile and with a few fine setulae confined to lowermost third. ♂ with outer vertical setae and without proclinate orbital setae. Antennae uniformly bright yellow-orange, palpi yellow. Thoracic dorsum, abdominal T1+2 and hind parts and centre line of T3 and T4 dark brown. Second costal sector haired ventrally. Abdomen rather rotund, without discal setae (except a few fine sparse discals on T5), without median marginals on T1+2 but with one pair of small marginals on T3] **Erythrocyra** Robineau-Desvoidy (part)
[Running out here is one species, *E. picta* Villeneuve, known only from holotype ♂, Nigeria: short descriptions in Villeneuve (1936:7) and Mesnil (1952b:252). Examination of holotype shows only one pair of reclinate orbital setae to be present (setae missing but pores well marked) and *E. picta* therefore runs out in part of the key with this character; confirmation is needed that only one pair of reclinate orbitals is normal and not aberrant.]
26. Scutellum without lateral setae. Three *stpl* setae. Arista with second segment conspicuously elongate (3–6 times as long as wide). Abdominal T1+2 and T3 with median marginal setae. Setae of facial ridges very strong and extending

up almost the whole ridge height. Abdomen of ♂ without specially modified hair. **Dolichocolon** Brauer & Bergenstamm

[Three species: no available identification key and revision much needed. Clearly, several undescribed species have been confused under the name *D. paradoxum* Brauer & Bergenstamm. See also couplet 8, where runs out an undescribed species with sparsely haired eyes.]

- Scutellum with lateral setae. Two *stpl* setae. Arista with second segment non-elongate. Abdominal T1+2 and T3 without median marginal setae. Setae of facial ridges rather weak and confined to lower half or slightly less. Abdomen of ♂ with long fine closely appressed hair on the whole of the sides and venter of T3–T5. [Head shape similar to *Sturmiopsis*. Second antennal segment long and nearly subequal to third segment, reddish orange. Abdomen black with very narrow fasciae of thick, whitish pollinosity confined to the dorsum of T3–T5 basally. Bend of wing vein *M* with a short appendix, apical section of *M* very faintly marked (appearing absent at first glance in some lights) (Fig. 112). *Puparium with posterior spiracles flush to surface and with strongly serpentine slits*] **Descampsina** Mesnil

[One species: *D. sesamiae* Mesnil, West Africa, description in Mesnil (1956b:76–77).]

- 27. Facial ridges setose or setulose on lower half or more of their height (usually on almost their whole height) 28
- Facial ridges bare (only with a few setulae immediately above the vibrissae) 33
- 28. Humeral callus with five setae (an angled line of three across the middle of the callus, a well-developed seta just mesad of the outermost one of the line of three and a fifth humeral set forwards equidistantly between the inner pair of the line of three). Colour pattern distinctive, abdomen uniformly reddish orange (except for narrow darkening of mid line and T4 hind margin), wings pale orange yellow basally and smoky brown on most of remainder (colour fading towards wing edges). [Ocellar setae very weak. Scutellum with two pairs of lateral setae and with upwardly directed apicals. Prosternum virtually bare (minute hair only). 3–4 *stpl* setae. Fore tibia with only one *pv* seta and no other differentiated setae. Mid tibia with two *ad* setae, only one *p* seta. Upper occiput closely covered with fine black setulae behind the postocular row] **Blepharellina** Mesnil

[One species: *B. picta* Mesnil, Nigeria, description in Mesnil (1952b:234). Known only from ♀ holotype (CNC, Ottawa).]

- Humeral callus with three or four setae. Nondescript, mainly blackish, forms without such colour pattern 29
- 29. Two *stpl* setae. Mid tibia with one *ad* seta. Parafacials very narrow, at narrowest point not more than about half as wide as third antennal segment. [Facial ridge setae strong and close on almost whole height. Ocellar setae enormous, much larger than reclinate orbital setae. Upper occiput flat. Arista very long, thickened only on basal two-fifths and with non-elongate second segment. ♂ without proclinate orbital setae. Apical scutellar setae strong, crossed and horizontal, subequal in size to laterals. Fore tibia without definite preapical *ad* seta, hind tibia without *pd* preapical seta. Wing without costal

spine, second costal sector haired ventrally. Intermediate abdominal tergites without discal setae, T1+2 with median marginal setae] . . . **Kaiseriola** Mesnil

[One species: *K. aperta* Mesnil, South Africa, description in Mesnil (1970:105, as *Diaprochaeta*). A second species present in Madagascar, description in same work. This genus-group taxon was described as a subgenus of *Diaprochaeta* Mesnil, but having now seen it I prefer to rank it as a valid genus, see note 15 in 'check-list' section, page 201. All significant features indicated by key characters here given.]

- Three or four *stpl* setae. Mid tibia with three or more differentiated setae of varied size. Parafrontals broad, at narrowest at least as wide as third antennal segment and often much wider 30

- 30. Four *stpl* setae. Scutellum with apical setae directed strongly upwards, crossed and strongly developed. [Parafrontals at lower ends bearing many long and irregular inwardly-curving setae between frontal row and eye. ♂ without proclinate orbital setae. Setae of facial ridges few but very strong. Arista thickened on basal two-thirds and its second segment elongate (about three times as long as its width). Upper occiput flat and without black occipital setulae. Ocellar setae strong. Wing without costal spine, *m-cu* meeting *M* about mid-way between *r-m* and bend. Intermediate abdominal tergites without discal setae, T1+2 with median marginal setae]

Undetermined genus

[Running out here is a ♂ specimen seen from Namibia (BMNH) of doubtful generic position. It has the superficial appearance and many of the characters of *Dolichocolon* but has two pairs of reclinate orbital setae.]

- Three *stpl* setae [small fourth present one side of *Prosopodopsis pulchricornis* holotype]. Scutellum with horizontally or subhorizontally directed apical setae, their size varied (very small upwardly directed apicals seen in some *Prosopodopsis* specimens but then setae of the pair not meeting at tips) . . 31

- 31. Wing without costal spine. Arista long and fine and only weakly thickened on its basal quarter or third. Abdominal T1+2 with a pair of median marginal setae (occasionally weak). Apical scutellar setae moderately strong, at least half as long as basals. Facial ridges with vestiture confined to lower half and consisting of rather straight weak setulae that are usually appressed towards the surface. Fore tibia with very weak *ad* preapical seta (inconspicuous and much smaller than the *d* preapical seta or the largest setae of the *ad* row). Wing with last section of *Cu*₁ shorter than or at most subequal in length to *m-cu*. [♂ with or without proclinate orbital setae. Bend of vein *M* nearer to wing edge than to *m-cu*] **Lydellina** Villeneuve (part)

[Three species (fourth exiting at couplet 34): identification key in Mesnil (1970:99–100). Difficult genus and key of limited value, certainly several undescribed species (cf. BMNH material).]

- Wing with well-differentiated costal spine (at least as long as *r-m*). Arista conspicuously thickened on at least two-thirds of its length, usually more (sometimes with second segment elongated). Abdominal T1+2 without median marginal setae. Apical scutellar setae very small or hair-like, less than half as long as basal setae. Facial ridges with vestiture on at least lowermost two-thirds and consisting of strong downcurved setae that stand out from surface. Fore tibia with strong and conspicuous *ad* preapical seta (subequal in size to *d* preapical seta and to the strongest seta of the *ad* row). Wing with last section of *Cu*₁ longer than *m-cu* 32

32. Upper occiput flat and without black setulae behind the postocular row. Wing with bend of vein *M* closer to the wing edge than to *m-cu* and with cell *R*₅ closed exactly at the margin (except in *pulchricornis* in which a minute petiole present). Antennae extremely long, their apices reaching to the level of the epistomal margin. [*♂* with proclinate orbital setae. Second arisal segment sometimes elongate. Antennae sometimes uniformly bright orange coloured. Wing with setulae confined to basal node (cf. the type-species *P. appendiculata* de Meijere from Oriental region in which veins *R*₁, *R*₄₊₅ and *Cu*₁ setulose along most of their length). Intermediate abdominal tergites without discal setae] **Prosopodopsis** Townsend

[One named species, hitherto in *Chlorolydella* but here transferred after examination of holotype to present genus as *Prosopodopsis pulchricornis* (Villeneuve) **comb. n.** Description in Villeneuve (1938a:3) very brief. Specimens from Namibia, Nigeria and Uganda in BMNH apparently represent at least three undescribed species and revision of genus needed.]

- Upper occiput swollen and bearing irregular fine black setulae behind the postocular row. Wing with bend of vein *M* about equidistant between *m-cu* and the wing edge and with cell *R*₅ narrowly open. Antennae long but distinctly falling short of epistomal margin. [*♂* with proclinate orbital setae. Second arisal segment short. Intermediate abdominal tergites without discal setae. Abdominal marginal setae of T3–T5 extremely strong, erect and conspicuous (cf. *Prosopodopsis* in which these setae not unusually strong and obvious and in which marginals usually absent on T3)]

Brachychaetoides Mesnil

[One species: *B. africanus* Mesnil, Tanzania, descriptions in Mesnil (1968b:6–7, as *Archiclops africanum*) and Mesnil (1970:109–110, as *Chlorolydella* (*Brachychaetoides*) *varipes*). The nominal species *varipes* here considered synonymous (**syn n.**) with *africanum* after comparison of holotypes, see note 14 in generic check-list section (page 201). *Brachychaetoides* Mesnil here considered full genus (**stat. n.**) instead of subgenus of *Chlorolydella*, and considered probably more closely allied to *Prosopodopsis* than to *Chlorolydella*, see aforesaid note 14.]

33. Mid tibia with one *ad* seta. Humeral callus with the three main setae standing in a shallow triangle (sometimes a small fourth seta present set forwards from inner pair of main three). [Arista often distinctly long-pubescent. Apical scutellar setae horizontal] **Thelairosoma** Villeneuve

[Fifteen species: no recommended identification key and revision much needed. A difficult group, including nine additional species described from Madagascar.]

- Mid tibia with two or more differentiated setae. Humeral callus with the three main setae standing in a straight line 34

34. Prosternum bare (? constant). Ocellar setae absent. Parafacials very broad (about twice as wide as third antennal segment). Abdomen unicolorous reddish orange and legs reddish yellow. Wings bicolorous, pale orange-yellow anterobasally and smoky brown on remainder (except only faintly infuscate on wing edge) **Eurysthaea** Robineau-Desvoidy

[One species: *E. rufiventris* Curran, Zaïre, description in Curran (1927a:7, as *Ceromasia*). Species known only from the ♀ holotype in American Museum of Natural History].

- Prosternum haired. Ocellar setae present, strong. Parafacials narrow, subequal in width to third antennal segment. Abdomen and legs with entirely black ground colour. Wings clear **Lydellina** Villeneuve (part)

[Running out here is *L. anorbitalis* Mesnil, a species of the genus in which the facial ridges are virtually entirely bare. Other species exit at couplet 31 because there are small appressed setulae on the lower halves of the ridges.]

XXXI. Key to Afrotropical Tachinidae with reduced wing venation

[Note. The taxa included in this special key have no phyletic relationship but are distinctive because of their aberrantly reduced wing venation, an obvious feature aiding their identification. The apical section of vein *M* (that is *M*₁), which normally in Tachinidae runs from the bend of vein *M* directly to the wing edge or to the petiole, is missing; there is therefore no bend of *M* and the vein is obsolete from the point in the wing membrane where the bend would normally be. Some of the included taxa also lack *m-cu*, but it should be noted that there is no instance in the Afrotropical tachinid fauna where *M*₁ is not simultaneously absent if *m-cu* is missing.]

1. Wing without crossvein *m-cu* (eg. Figs 105 & 147) 2
- Wing with crossvein *m-cu* (eg. Fig. 109) 4
2. Lower calyptrae and postscutellum absent or virtually so. Two *post dc* setae. Pre-alar and acrostichal setae absent
Apomorphomyia lygaeidophaga [Cinochirini, see key III]
- Lower calyptrae and postscutellum present. More than two *post dc* setae. Pre-alar and acrostichal setae present 3
3. Parafacials almost obliterated, eye in profile reaching the facial margin of the head. Wing vein *R*₄₊₅ with a single strong setula isolated on the basal node. Three *post dc* setae. Prosternum setulose (one setula on each side). Lower prostigmatic seta strong and proclinate. Pre-alar seta extremely small. [Tiny species, length 2–3 mm, with black body ground colour and black legs]
Phytomyptera spp. [Neaerini, see key XXI]
- Parafacials well developed, subequal in width to antenna and eye not nearly reaching facial margin seen in profile. Wing vein *R*₄₊₅ with a basal row of setulae reaching as far as *r-m*. Four *post dc* setae. Prosternum bare. Lower prostigmatic seta hair-like and reclinate. Pre-alar seta very strong (subequal in size to first *post dc* seta). [Larger species, length 6–7 mm, with thorax largely tawny and abdomen uniformly yellow-orange or red]
Phytomypterina rufescens [Eryciini, see key XXX]
4. Ocelli absent. [Legs and abdomen without differentiated setae. First *sa* seta standing completely alone in supra-alar region of thorax (both *pra* and second *sa* setae absent). One *post ia* seta. Head profile as in fig. 63]
Latiginella spp. [Blondeliini, see key XXIII]
- Ocelli present 5
5. Wing veins *R*₁ and *Cu*₁ wholly or partly setulose 6
- Wing veins *R*₁ and *Cu*₁ bare 7
6. Mid tibia with one *ad* seta. Parafacials bare. Four *post dc* setae. Abdominal T1 + 2 not excavate to its hind margin
Actia exsecta [Siphonini, see key XXII]
- [The tribe Siphonini is a large group in which similar loss of *M*₁ occurs in certain non-Afrotropical species. Such aberrancy perhaps occurs in Afrotropical species other than *exsecta*, but this is apparently the only described Afrotropical siphonine with such characteristic.]
- Mid tibia with several *ad* setae. Parafacials haired. Three *post dc* setae. Abdominal T1 + 2 excavate to its hind margin
Reichardia insignis [Voriini, see key X]
7. Abdomen widely membranous ventrally (Fig. 130), with a heavy postabdomen recurved under the preabdomen. Abdomen either without any strong setae differentiated from the hairing (♀) or with the marginal setae exceed-

- ingly long and fine and recumbent or almost so (δ). Scutellum with three pairs of marginal setae of which the subapical pair stand extremely wide apart and the apicals are extremely strong and crossed. [Abdomen of δ bicolorous (yellow-orange basally and black apically) and with extremely long fine close and recumbent hair dorsally on T3 and T4; abdomen of φ all black and without such dense, fine hair]. *Besseria oblita* [Cylindromyiini, see key II]
- Abdomen not widely membranous ventrally and without a heavy recurved postabdomen. Abdomen with strong erect setae differentiated from hairing. Scutellum without such configuration of marginal setae 8
8. Eyes haired. δ abdomen with large ventral patches of short close appressed hair on T3 and T4 (Fig. 129). [Ocellar setae strong. Prosteronum haired. Three *post dc* setae. Apical scutellar setae strong, crossed and horizontal. Arista thickened on nearly three-fifths of its length. Wing with costal spine. Mid tibia with one *ad* seta. Abdominal T1+2 excavate to its hind margin] *Nealsomyia* 'lindneri' Mesnil [Eryciini, see key XXX]
- [This species is known only from the δ holotype. Absence of bend and the apical section (M_1) of M in the wings might be a freak aberration in the single specimen. Further material is needed to determine if the condition of vein M is normal for the species.]
- Eyes bare. δ abdomen without such hair fascicles 9
9. Prosteronum setulose. Wing vein R_{4+5} with a single isolated setula on its basal node. [Palpi of φ strongly clubbed. Abdominal T1+2 not excavate to its hind margin] *Elfia aristalis* [Neaerini, see key XXI]
- Prosteronum bare. Wing vein R_{4+5} with a row of several setulae on the basal node that extends part or all of the way to *r-m* 10
10. Head profile subtriangular, antennal axis very high on the head and frontal profile only slightly falling anteriorly (Fig. 45). Arista thickened on almost all its length, bare and with both basal segments much elongated. Antenna with anterior tip of third segment forming a sharp point. Scutellum with three pairs of marginal setae (apicals crossed and extremely strong). Abdomen with median discal setae on T3 and T4, no median marginal setae on T1+2 and with one pair of weak median marginals on T3
- Trichactia* sp. n. [Eloceriini, see key XIII]
- Head profile not subtriangular, antennal axis low on head and well below eye middle, frontal profile falling steeply. Arista not thickened, sub-plumose and with non-elongate basal segments. Antenna with rounded apex as normal. Scutellum with two pairs of marginal setae (hindmost pair being widely diverging subapicals and apicals absent). Abdomen without discal setae on T3 and T4, with a pair of strong median marginal setae on T1+2 and with two pairs of extremely strong and subequal marginals on T3
- Lindneriola paradoxa* [Blondeliini, see key XXIII]

DESCRIPTIONS OF A NEW GENUS AND TWO NEW SPECIES

The following new taxa specially relevant to the keys are described in this section: *Apomorphomyia* gen. n. and its single species *Apomorphomyia lygaeidophaga* sp. n.; *Plagiomima rufolateralis* sp. n. (Voriini), the first Afrotropical species to be assigned to the hitherto Holarctic genus *Plagiomima* Brauer & Bergenstamm.

Genus *Apomorphomyia* gen. n.

Type-species: Apomorphomyia lygaeidophaga sp. n. (description below).

Diagnosis. Head widely and equally dichoptic in both sexes (Fig. 144), head profile with long, gently sloping frons and more strongly prominent at the profrons than at vibrissal angle (Fig. 145). Lunula exceptionally large, very wide and slightly prominent. Interfrontal area broad. Eyes bare, their long axis oblique (Fig. 145). Head chaetotaxy well developed, similar in both sexes, setae moderately strong (Fig. 145), vibrissae strong and on very slightly prominent angles; ocellar setae present (divaricate-reclinate), inner and outer vertical setae present, two pairs of proclinate orbital setae, about 4–6 pairs of variably-sized frontal setae, one definite peristomal seta (Fig. 145). Parafacials bare, well developed but narrower than third antennal segment. Antennae and mouthparts small, third antennal segment subequal in length to second; arista micropubescent. Ocelli present. Thorax short and broad, dorsum as in Fig. 146. Thoracic chaetotaxy (dorsum Fig. 146): three humeral setae, one posthumeral seta, presutural seta present, one *sa* seta (strong), pre-alar seta absent, 1–2 notopleural setae [?, one in ♂ holotype, 2 in ♀ paratype], two postalar setae, 0 + 0 *acr* setae, 2 + 2 *dc* setae (first *prst dc* seta weak and inconspicuous); 0 + 1 *ia* setae [the *ia* absent one side in holotype]; scutellum with two pairs of strong setae (apical and lateral positions) and two other differentiated setulae (Fig. 146), no discal setae; prostigmatic and propleural setae present, mesopleural row well developed, one definite *stpl* seta, pteropleural seta present, one main and one weak hypopleural setae. Propleura and prosternum bare. Metathorax membranous between hind coxae and abdominal base. Postscutellum absent. *Legs* short and with small indistinct setae (these including mid tibia with submedian *v* setae and one *ad* seta); fore coxae bare on inner half of anterior surface, except at tips; claws short in both sexes. *Wings* shaped as in Fig. 147, veins very faintly marked and venation strikingly reduced; vein *M* petering out and without trace of bend or *M*₁, crossvein *m-cu* absent; basal node of vein *R*₄₊₅ with one small setula dorsally, veins otherwise bare; microtrichia of wing surface and edge-fringe strong and conspicuous. Lower calyptrae exceptionally small, almost invisible at first sight, represented by narrow subcrescentic strip of membrane (Fig. 146). *Abdomen* subfusiform and with very feeble recumbent setae, including an indefinite pair of median marginals on T1+2 and T3 and a poorly differentiated row of marginals on T4, no discal setae on any tergite; T1+2 without dorsal excavation; ♂ with bulbous hypogygium differentiated from preabdomen by a neck-like constriction (Fig. 150), ♀ terminalia with a pair of horizontally apposed forceps (Fig. 149).

***Apomorphomyia lygaeidophaga* sp. n.**

♂ & ♀. *Head*: Ground colour yellow or tawny yellow, especially on genal, facial and lower parafrontal regions; upper ends of parafrontals and most of occipital region (except for yellow-orange postvertical area) brown to brownish black; interfrontal area velvety orange-brown or reddish brown, ocellar triangle blackish brown to black. Lunula and first antennal segment semi-translucent honey yellow. Second and third antennal segments, and basal quarter or third of aristae, brownish black; remainder of aristae pale creamy yellow. Palpi yellow.

Thorax: Ground colour mainly tawny yellow to dingy pale brown, darkening to brown or blackish brown on scutellum and on paired narrow sublateral dark mesonotal vittae; sides of mesonotum, a fine median mesonotal vitta, the postero-median part of the scutum and the prescutum behind the humeral calli either dark (as in ♂ holotype) or mainly pale (as in ♀ paratype).

Legs: Basal parts tawny (fore coxae clearer yellowish than femora), tibiae and tarsi brownish black.

Wings: Uniformly smoky.

Abdomen: Almost uniformly dark tawny to dark reddish brown, apical half of T5 in ♂ yellow and contrasting with dark basal half, basal half of T5 in ♀ indefinitely paler (somewhat orange coloured); no surface pattern, pollinosity so inconspicuous that whole abdomen appears semi-shining; abdominal hairing sparse, fine and recumbent.

Structure and chaetotaxy: Genus monotypic, therefore as described above in generic diagnosis.

Measurements: body-length 2,5–2,7 mm, wing-length 2,0–2,1 mm [2 specimens, holotype the larger.]

Puparium. Uniformly pale brownish orange, except for contrastingly black posterior spiracles. Posterior spiracles forming a pair of long, well-separated shining processes (Fig. 148), the slits only slightly sinuous or looped.

Material examined. Holotype ♂ and paratype ♀ (each on card point with associated puparium), SOUTH AFRICA: *Transvaal*: Johannesburg, Frankenwald, 16.ii.1980 (B. Levey). In British Museum (Natural History), London.

Host-relations. Both type-specimens reared from adults of *Nysius* sp. (Hemiptera: Lygaeidae) on *Erigeron* sp. Most probably host-specific to bugs of the family Lygaeidae.

Distribution. Known only from the type-material cited above from South Africa.

Peculiarities and affinities. This very small and extremely aberrant fly is not immediately recognisable as belonging to the Tachinidae, and because of the virtual absence of lower calyptrae seems at first to be hardly assignable to the Calyptratae series of Cyclorrhapha. Two main features, however, declare its phyletic relationships rather clearly, viz. its parasitic habit on bugs of the family Lygaeidae and the possession in the female of a pair of horizontally opposed forceps in the terminalia. Although not evident from the general external morphology, the host and resemblance in postabdominal structure to the genera *Cinochira* Zetterstedt

and *Leucostoma* Meigen allow the conclusion that *Apomorphomyia lygaeidophaga* gen. n., sp. n., must be assigned to the cinochirine-leucostomatine series of the subfamily Phasiinae. An adequate characterisation of a tribe Cinochirini distinct from Leucostomatini is needed, for the former group seems to be only dubiously distinct from the latter, but assuming the distinctness of these tribes for present purposes I assign *A. lygaeidophaga* to the Cinochirini close to *Cinochira* (with which it most notably conforms in having lygaeid hosts and a very similar forcipate female abdomen). The specific name alludes to the host-relations, and the generic name *Apomorphomyia* to the several strongly apomorphic features by which in combination the remarkable new tachinid differs from other Tachinidae.

The new genus differs from typical Tachinidae very markedly by three characters that make it hardly placeable in the family at all on the classical characters, viz. the almost total absence of lower calyptrae (these reduced to very narrow subcrescentic strips of membrane so inconspicuous as to seem absent at first glance: Fig. 146), the absence of a swollen postscutellum beneath the scutellum, and the extraordinarily reduced and feeble wing venation (Fig. 147). By all three features does *Apomorphomyia* differ from *Cinochira* (in which there is a strong and complete wing venation in which vein *M* runs straight to the wing edge, a definite postscutellum and well-developed subcircular calyptrae) and indeed from all known Tachinidae if the characters are considered together; a few other tachinids have such reduced wing veins (though seldom if ever so weak), and a lack of postscutellum occurs in a few forms (eg. *Litophasia sulcifacies* Dear). Other main distinctions between the two genera are as follows: *Cinochira* with long axis of eye vertical, ocellar setae proclinate, lunula absent, two *post ia* setae, scutellum with three pairs of strong marginal setae; *Apomorphomyia* with long axis of eye strongly oblique (Fig. 145), ocellar setae reclinate-divaricate, lunula present and very large (visible from above, Fig. 144), 0–1 *post ia* setae, scutellum with two pairs of strong marginal setae (Fig. 146).

Absence of the lunula is a very rare character in Tachinidae, but apart from *Cinochira*, occurs also in the Afrotropical genus *Cahenia* Verbeke (syn. *Mapolomyia* Verbeke). Its absence in *Cahenia* is probably a reason, aside from some resemblance in male genitalia, for Verbeke (1960) associating *Cahenia*–*Mapolomyia* with *Cinochira* into the small tribe Cinochirini—for there is rather little external similarity between *Cahenia* and *Cinochira* and there are as yet no data from parasitic habit to support assignment of *Cahenia* to this tribe (because its female and host remain unknown). Nevertheless, as *Cahenia* remains at present assigned to Cinochirini, and *Apomorphomyia* seems clearly to belong to this group, brief comment is needed to compare the new genus with *Cahenia*. *Apomorphomyia* differs from *Cahenia* by all the characters already mentioned that distinguish it from *Cinochira*, and additionally by the following notable characteristics: *Cahenia* with plumose arista, three *post dc* setae, and strong leg chaetotaxy; *Apomorphomyia* with short-pubescent arista, two *post dc* setae, and very feeble leg chaetotaxy. (The occurrence of a plumose arista in *Cahenia* is remarkable if this genus is correctly placed in Cinochirini, since plumosity on the arista is a character of great rarity in the whole of the subfamily Phasiinae.) A curious feature by which the male of *Apomorphomyia* differs from that of

Cinochira and *Cahenia* (in fact from all other Tachinidae known to me) is the deep neck-like constriction between the preabdomen and postabdomen which sets the latter off as a discretely bulbous hypopygium (Fig. 150) when seen from above.

Mesnil (1975*b*) has described the monotypic genus *Oblitoneura* (type-species *O. agromyzina* Mesnil) from Israel, and on the basis of its morphology—the host is not known—has hinted at its possible relationship to *Cinochira*. I have therefore examined a specimen of *Oblitoneura agromyzina* (kindly loaned to me by Professor J. Kugler from the collection at Tel Aviv), in case it should appear that *Apomorphomyia* gen. n. is related to *Oblitoneura*. There is a superficial resemblance because the wing of *Oblitoneura* has lost the bend of *M*, *M*₁ and *m-cu* but there are no other notable morphological similarities, and even the wing (despite venational reduction of a generally similar kind) is substantially different. In *Oblitoneura* the surviving venation is strongly developed, especially the very strong vein *R*₂₊₃ which extends well towards the wing tip (this vein very faint and short in *Apomorphomyia*, Fig. 147); both genera have cross-vein *r-m* in an exceptionally basal position.

Oblitoneura differs greatly from *Apomorphomyia* by the *Catharosia*-like head in which the long axis of the eye is vertical and the genal depth very small (*Oblitoneura* head generally similar in form to Fig. 23), by the much narrower frons that is not as wide as one eye seen from above, by the moderately well-developed postscutellum, by its very large humped lower calyptrae, by the lack of the lunula, and by several chaetotactic distinctions (eg. two *post ia* setae and three *post dc* setae). The genitalia resemble those of *Catharosia* (as Mesnil states) and not those of *Cinochira*, and the affinities of *Oblitoneura* appear without doubt to lie with *Catharosia* more than *Cinochira* or *Apomorphomyia*. In short, I find no evidence of close phyletic relationship between *Oblitoneura* and *Apomorphomyia*. (It is worth noting that *O. agromyzina* is one of the smallest described tachinids, and the specimen examined had a body length of only 2.1 mm. Unfortunately Mesnil's description is unillustrated.)

The posterior puparial spiracles of *Apomorphomyia lygaeidophaga* (Fig. 148) deserve special comment as they may be good indicators of the true relationships of this taxon. These spiracles are exactly similar to those of some *Leucostoma* species, including an unidentified species known from South Africa that (like *Apomorphomyia*) parasitises Lygaeidae. The host group, together with the unusual type of female terminalia (apical horizontal forceps), held in common by *Leucostoma*, *Cinochira* and *Apomorphomyia*, and the type of puparial spiracle known in two of these genera—the puparium of *Cinochira* is apparently undescribed and is unknown to me—strongly suggest a close evolutionary relationship between the three genera. This presumed relationship is not expressed in most aspects of the external morphology: *Apomorphomyia* and *Leucostoma* are very different looking flies, the latter being very conspicuously a tachinid and (in contrast to the former) having a complete normal wing venation, very bulbous postscutellum, and extremely large (in males sometimes enormous) lower calyptrae.

From the comments here made it is evident that *Cinochirini* is scarcely a tenable tribe distinct from *Leucostomatini*, but since it has been held so in recent literature I accept it for present purposes and assign *Apomorphomyia* gen. n. to it.

Finally it should be noted that in *Apomorphomyia*, *Cahenia* and *Cinochira* the frons is equally very broad in the two sexes and both sexes have proclinate orbital setae. In *Leucostoma* the frons of the male is narrowed in comparison with that of the female and lacks proclinate orbital setae.

***Plagiomima rufolateralis* sp. n.**

[Specific name alludes to the extensively orange-red sides of the abdomen, a very unusual feature in *Voriini*.]

♂. *Head*: Head profile as in Fig. 40. Eyes bare. Ground colour blackish except for some dark red-brown colour to genal regions and interfrontal area brick red or reddish brown; pollinosity white. Vertex extremely wide, about 0,52 of head width, interfrontal area strongly widening posteriorly. Gena about 0,22 of eye-height, genal depth subequal to width of antenna. Two or three pairs of differentiated upper orbital setae, these directed outwards. Proclinate orbital setae variably two to four pairs. Parafacials with fine but sometimes rather sparse hairing. Antennae conspicuously bicolorous, second segment bright orange and contrasting with brownish-black third segment; arista brownish black, thickened on most of its length and with its second segment slightly elongate. Palpi yellow.

Thorax: Black with a covering of white pollinosity that gives thorax a generally grey appearance; dorsum with four undusted black vittae, the submedian pair on prescutum very slender and lying between *acr* and *dc* setae on each side. Humeral callus with four setae but innermost one of basal row, and the one set forwards, very weak. 3 + 3 *dc* setae. 3 + 3 *acr* setae (but one or more pairs sometimes very weakly or not differentiated). 1 + 2 *ia* setae (the *post ia* both strong, and anterior one inserted nearer to transverse suture than to the posterior one). Prosternum usually with one short, fine, inconspicuous hair on each side, sometimes totally bare. Pre-alar seta minute. Three *stpl* setae. Scutellum with usual *voriini* three pairs of marginal setae but without any erect subspiniiform preapical setae (dorsum of scutellum showing only one pair of recumbent setae on posterior half and one or both of this pair sometimes absent).

Wings: Hyaline or at most only faintly dusky, appearing yellow-orange at base to naked eye because of yellow colouring of anterobasal veins. Venation as in Fig. 100. Second costal sector haired ventrally. Veins R_1 and Cu_1 bare, vein R_{4+5} setulose along its length to a point well beyond *r-m* (almost to a level with the bend of *M*) on dorsal surface and with one or two setulae basally on ventral surface. Basicoستا blackish brown. Calyptrae white. Costal spine absent.

Legs: Black. Chaetotaxy normal for *Voriini*.

Abdomen: Subfusiform. Ground colour reddish yellow or orange on most of surface but black on following areas: excavation of $T1 + 2$, median vitta on $T3$ and $T4$, hind margin of $T4$ (to variable extent), all or almost all of $T5$. Pollinosity white and thin, with somewhat shifting appearance as fly is turned, least developed posteriorly on intermediate tergites. No discal setae and median marginals absent on $T1 + 2$, one pair of median marginal setae on $T3$.

Measurements. Body-length 8,5–9,2 mm [5 specimens], wing-length 5,9–6,8 mm [3 specimens].

♀. Almost exactly like ♂ but antennae slightly shorter and parafacials wider (latter at mid-point about twice as wide as third antennal segment).

Puparium. Light reddish brown with conspicuously wrinkled-striate surface. Posterior spiracles forming very conspicuous paired prominences, each prominence with three almost straight or only slightly serpentine slits raised on sharp ridges (deep grooves between slit-ridges giving each prominence a definite trifold configuration apically).

Material examined. Holotype ♂ (with puparium), BOTSWANA: Bakgatla, Sebele, 8.i.1971 (R. E. Roome). Paratypes: 2 ♂ (one with puparium), same data as holotype except date 1.xii.1970; 2 ♂, 1 ♀, NAMIBIA: Regenstein, 15 miles SSW of Windhoek, 7 [♀] & 8 [♂♂].ii.1972 (BMNH Southern African Expedition). All type-material in British Museum (Natural History), London.

Host-relations. Parasite of Noctuidae, paratypes from Botswana reared from larvae of *Heliothis armigera* Hübner on carnations and holotype reared from larva of *Heliothis* sp. on sunflower.

Distribution. Known only from the above-listed material from Botswana and Namibia. Probably confined to dry areas of southern Africa.

Remarks on generic placement. The new species differs from typical Voriini by having only two posterior intra-alar setae (instead of the three that are almost universally present amongst voriines) and in the unusual coloration for a member of this tribe: other voriines known to me all have a uniformly black body ground colour, but *Plagiomima rufolateralis* sp. n. has the abdomen very extensively and conspicuously reddish yellow or orange. I at first inclined to consider that a new genus might be required for this new species, but the wing venation and head configuration and chaetotaxy, together with most other characters, are so much those of *Plagiomima* Brauer & Bergenstamm (for which Mesnil (1974) has provided a comprehensive diagnosis) that assignment to this genus is preferable. The new species differs from other species of *Plagiomima* by the abdominal colour and possession of only two *post ia* setae already mentioned, and also in lacking erect spiniform setae in a preapical position on the scutellum.

In many characters the new species closely resembles *Reichardia insignis* Karsch, a voriine known only from the male holotype (Berlin Museum) collected in Tanzania and type-species of the monotypic genus *Reichardia* Karsch. This genus is extremely closely allied to *Plagiomima*, but has never been studied directly in comparison with the latter (from which it most obviously differs by the wing venation lacking M_1 and the bend of M). It is doubtful whether this venational difference justifies separate generic status and the possible sinking of *Plagiomima* (date 1891) into junior synonymy with *Reichardia* (date 1886) should be considered by any future student of voriine genera.

As the generic situation stands at present, the description of *P. rufolateralis* provides the first record for the genus *Plagiomima* in the Afrotropical region; the genus is therefore additional to those Voriini listed in the Afrotropical Catalogue (Crosskey 1980:837–838).

THE HOST-RELATIONS OF AFROTROPICAL
TACHINIDAE AS AN AID TO IDENTIFICATION

An enormous unexploited field of research lies in the host-relations of the Tachinidae in tropical and southern Africa. For the whole Afrotropical region knowledge remains very scanty, and such data that exist are strongly weighted towards those Tachinidae that parasitise either the large Lepidoptera that have popular appeal or the pests that attack economically important crops. Most of the existing knowledge has come, in fact, from the identification of tachinid flies reared from known hosts during field investigations by departments of agriculture or forestry.

Host-parasite catalogues are notoriously fallible because unless prepared with the aid of reliably identified voucher specimens they will embody a large amount of recording of erroneous data taken uncritically from old literature. In the case of tachinid parasites misidentification at specific and generic levels has often been so rife that published records are valueless, or at least highly suspect, unless guaranteed by voucher specimens in museum collections whose identities can be authenticated. Unfortunately, the hosts of reared Tachinidae are only very seldom preserved along with the parasites and there is rarely any way of directly authenticating the host identities. The correctness of the host identification in a tachinid-host relationship usually has to be taken on trust, though improved taxonomic knowledge of the host group concerned often helps to eliminate obvious errors: for example, the noctuid moth once widely known in Africa as *Prodenia litura* Fabricius is correctly *Spodoptera littoralis* Boisduval, the former name being a misidentification in tropical and southern Africa of an Oriental species (Brown & Dewhurst 1975). Because of such difficulties, the information given in this section is based almost entirely on voucher material of Tachinidae standing in the collection of the British Museum (Natural History) and bearing interpretable names of the hosts from which it was reared; a few recently published records in which both tachinid and host are certainly correctly identified have been taken into account.

Assembly of data from these sources, shown in synoptic form in the tachinid generic list that follows, indicates that there is at least some knowledge of the hosts for 86 of the 188 tachinid genera that have been recorded from tropical and southern Africa—although in some instances it amounts to no more than one recorded host for one species included in the genus (and even the host may not be identified below the family level, eg. 'Ex geometrid sp.').

Scanty though the data are for tropical and southern Africa, they clearly indicate that the host-parasite relationships of Tachinidae in this geographical area are exactly comparable with what is known for other zoogeographical areas. This clear comparability, together with the established data for the host relations of genera and tribes found in tropical and southern Africa, indicate that a background knowledge of the hosts (even though sometimes derived from rather few records) can be a useful aid towards generic identification, and is therefore specially relevant to the keys given in this work whenever the specimens being identified have been obtained from known hosts.

If the host belongs to the Hemiptera the associated tachinid parasite should be a member of the Phasiinae, as this subfamily includes all the tachinids known to parasitise bugs. Pyrrhocorid 'cotton-stainers' of the genus *Dysdercus* are attacked particularly by *Alophora*, *Bogosia* and *Bogosiella*, the Pentatomidae by *Gymnosoma*, the Coreidae apparently mainly by the *Hermya*-*Paraclara* group and the Lygaeidae by Leucostomatini-Cinochirini (closely allied groups of Phasiinae that probably do not warrant separate tribal status).

Among Coleoptera the identity of the host family can also be helpful in providing a clue to the likely identity of any tachinid parasite. For example, the Chrysomelidae are attacked notably by *Chetoptilia* and *Macquartia* and the Curculionidae by *Pandelleia*. Larvae of Scarabaeidae provide the hosts for most Dexiini apparently (although the number of records is very small), but also for some other Tachinidae seemingly not phyletically close to the dexiines, particularly *Microphthalma* and the palpostomatine genus *Eurixopsis* (presumably also for Afrotropical species of *Palpostoma* for which hosts remain unrecorded).

Hymenoptera are not known to be parasitised to any great extent by Afrotropical Tachinidae, but a few noteworthy and precise host-associations are known. *Rondaniooestrus* is a host-specific parasite of honey-bees, the only tachinid that attacks bees, and *Anacamptomyia* is a parasite only of social wasps (especially of *Belonogaster* species). A few polyphagous tachinids that mainly parasitise Lepidoptera also occasionally attack sawflies, but there are extremely few such records to date for the Afrotropical area.

Lepidoptera provide the hosts for the great majority of Tachinidae in tropical and southern Africa, but only for members of the Tachininae and Goniinae since none of the Phasiinae (parasites of bugs) or Dexiinae (parasites of beetles) has a lepidopterous host. There is a marked tendency for tachinids that attack butterflies and moths to be non-host-specific in their attentions, so that the same parasite species (or member species of the same genus) may be obtained from hosts in several lepidopterous families. Nevertheless certain families almost exclusively provide hosts for particular genera of tachinid: *Aplomya* and *Cadurciella* attack Lycaenidae, *Cadurcia* and *Pseudoperichaeta* attack Pyralidae, *Chaetexorista* attacks Limacodidae, *Thecocarcelia* parasitises mainly Hesperidae, and *Zygothria* is almost exclusively a parasite of Sphingidae. Other fairly precise relationships between tachinid genera and particular lepidopterous families probably exist but are disguised at present through the prevailing paucity of host-parasite records in tropical and southern Africa.

Host records involving Orthoptera are few, but it is likely that insects belonging to the orthopteroid orders provide many more hosts than can be appreciated at present. Acridoidea are hosts of the Acemyini, and almost certainly will be proved so for the *Gynandromyia*-*Phorocerosoma* group of Ethillini. Tettigoniidae provide the only host so far known for the genus *Glaurocara*.

No host-records involving the Diptera as hosts for Tachinidae exist for the Afrotropical region, and there is only one recorded host in the Embioptera. In this record (Mesnil 1953b) the host was cited as an unidentified species of *Dictyoploca*, but for nomenclatural reasons this generic name now applies in the Lepidoptera Saturniidae and the embiopteron host mentioned by Mesnil

in the original description of *Rossimylops whiteheadi* should now be known as *Apterembia* Ross sp. (Dr E. S. Ross, pers. comm.).

Synoptic list of tachinid genera and their hosts in tropical and southern Africa

Although the tachinid genera are listed alphabetically they have also been serially numbered; this is to simplify the 'host-finder' cross-reference entries that are given immediately after the list. In the host column the entry 'No records TSA' means that there are apparently no known hosts, for the genus concerned, in tropical and southern Africa but that host data exist for other parts of the generic range (as indicated in parentheses); the entry '[Unknown]' means that there are no host records at all for any member of the genus. Nearly all the genera for which there is an '[Unknown]' entry are endemics in the Afrotropical region. Listed hosts are those known for the genus in tropical and southern Africa only, and are indicated only to family level if many different hosts are known; if only one host species is apparently known this is named, and in a few cases example species are named for a family of Lepidoptera when these are regularly occurring in host relationships. The occurrence of *Spodoptera* species, and of *Heliothis armigera*, as hosts has been specially noted because of the economic significance of these armyworm and bollworm pests. The insect host orders are abbreviated as: COL.—Coleoptera; EMB.—Embioptera; HEM.—Hemiptera; HYM.—Hymenoptera; LEP.—Lepidoptera; DICT.—Dictyoptera; ORTH.—Orthoptera.

Tachinid Genus	Hosts
1. <i>Actia</i>	LEP. mainly micros incl. Gelechiidae (<i>Brachmia convolvuli</i> Walsingham & <i>Platyedra cunctatrix</i> Meyrick = <i>Mometa chlidanopa</i> Meyrick), Pyralidae (<i>Chilo diffusilinea</i> Joannis) and Tortricidae (<i>Cryptophlebia leucotreta</i> Meyrick)
2. <i>Afrolixa</i>	COL. Chrysomelidae sp. (orig. descrip. <i>A. macula</i>) LEP. Noctuidae (<i>Spodoptera exempta</i> Walker)
3. <i>Afrostormia</i>	LEP. Geometridae sp.
4. <i>Allothelaira</i>	[Unknown]
5. <i>Alophora</i>	HEM. mainly Pyrrhocoridae (<i>Dysdercus</i> spp. incl. <i>nigrofasciatus</i> Stål and <i>superstitiosus</i> Fabricius) also Coreidae (<i>Clavigralla horrida</i> Germar and <i>C. tomentosicollis</i> Stål), Lygaeidae (incl. <i>Scantius forsteri centralis</i> Signoret and <i>Spilostethus</i> spp.), and Pentatomidae (incl. <i>Agonoscelis puberula</i> Stål and <i>A. versicolor</i> Fabricius)
6. <i>Amesiomima</i>	[Unknown]
7. <i>Anacamptomyia</i>	HYM. Vespidae (<i>Belonogaster</i> spp. incl. <i>grisea</i> Fabricius and <i>junceae</i> Fabricius, <i>Polistes marginalis</i> Fabricius, <i>Ropalidia cincta</i> Lepeletier)
8. <i>Antistasea</i>	[Unknown]
9. <i>Aplomya</i>	LEP. Lycaenidae (incl. <i>Anthene amarah</i> Guérin, <i>A. definita</i> Butler, <i>A. otacilia</i> Trimen, <i>Axanus moriqua</i> Wallengren and <i>A. natalensis</i> Trimen, <i>Eicochrysops messapus</i> Godart, <i>Euchrysops malathana</i> Boisduval, <i>Leptomyrina hirundo</i> Wallengren, <i>Myrina dermaptera</i> Wallengren and <i>M. ficedula</i> Trimen)
10. <i>Apomorphomyia</i>	HEM. Lygaeidae (<i>Nysius</i> sp.)
11. <i>Aulacephala</i>	[Unknown] Orthoptera probable
12. <i>Bessa</i>	LEP. Pyralidae (<i>Herculia ignefimbrialis</i> Hampson)
13. <i>Besseria</i>	No records TSA (Hemiptera in Europe)
14. <i>Billaea</i>	COL. Cerambycidae (<i>Bixadus sierricola</i> White, <i>Tragocephala gorilla</i> Thomson), Scarabaeidae (incl. <i>Odontorrhina krigei</i> Schein)
15. <i>Blepharella</i>	LEP. many Noctuidae of various genera (incl. <i>Achaea</i> , <i>Heliothis</i> , <i>Paralelia</i> and <i>Spodoptera exempta</i> Walker), also Sphingidae (<i>Agrius convolvuli</i> Linnaeus)
16. <i>Blepharellina</i>	[Unknown]

17. *Blondelia* No records TSA (wide range Lepidoptera, also Hymenoptera Tenthredinidae, in Eurasia)
18. *Bogusia* HEM. Pentatomidae (incl. *Antestiopsis orbitalis* Westwood), Pyrrhonoridae (incl. *Dysdercus supersticiosus* Fabricius)
19. *Bogosiella* HEM. Pyrrhonoridae (*Dysdercus* spp. incl. *cardinalis* Gerstaecker, *nigrofasciatus* Stål and *supersticiosus* Fabricius)
20. *Brachelia* [Unknown]
21. *Bracheliopsis* LEP. Noctuidae (*Spodoptera exempta* Walker)
22. *Brachychaetoides* [Unknown]
23. *Cadurcia* LEP. mainly Pyralidae (incl. *Antigastra catalaunalis* Duponchel, *Macalla* sp., *Margaronia sericea* Drury and *Syllepte derogata* Fabricius), also Plutellidae (*Plutella xylostella* Linnaeus) and Yponomeutidae (*Yponomeuta* sp.)
24. *Cadurciella* LEP. Lycaenidae (*Azanus moriqua* Wallengren)
25. *Cahenia* [Unknown]
26. *Calazenillia* [Unknown]
27. *Carcelia* LEP. very wide range of known hosts in Arctiidae, Limacodidae, Lymantriidae, Noctuidae (incl. *Carcelia evolvans* complex sp. on *Diparopsis watersi* Rothschild and *C. illota* on *Heliothis armigera* Hübner), Notodontidae, Nymphalidae, Papilionidae, Saturniidae and Sphingidae
28. *Catapariprosopa* [Unknown]
29. *Catharosia* No records TSA (Lygaeidae in Europe)
30. *Ceracia* ORTH. Acrididae (incl. red locust *Nomadacris septemfasciata* Serville)
31. *Ceranthia* No records TSA (LEP. Geometridae in Europe)
32. *Ceromya* LEP. various Lymantriidae, Noctuidae, Saturniidae and Sphingidae
33. *Cestonia* No records TSA (LEP. Tortricidae *Sparganothis* sp. in Europe)
34. *Cestonionerva* [Unknown]
35. *Chaetexorista* LEP. Limacodidae (*Omocena syrtis* Schaus & Clemens, *Parasa vivida* Walker)
36. *Chaetoria* LEP. Geometridae sp.
37. *Charitella* [Unknown]
38. *Chetogena* LEP. Noctuidae (mainly *Spodoptera exempta* Walker), also Psychidae sp.
39. *Chetoptilia* COL. Chrysomelidae (Cassidinae) sp.
40. *Chlorolydella* LEP. Noctuidae (*Agrotis segetum* Denis & Schiffermüller, *Trichoplusia orichalcea* Fabricius)
41. *Chromatophania* [Unknown]
42. *Chyuluella* [Unknown]
43. *Clairvillia* No records TSA (HEM. Coreidae in Europe)
44. *Cololeskia* [Unknown]
45. *Compsilura* LEP. Pieridae (*Catopsilia florella* Fabricius and *Mylothris trymenia* Butler) and Saturniidae (*Cirina forda* Westwood and *Imbrasia cytherea* Fabricius), also Geometridae sp. and Notodontidae sp. [Vast range LEP. hosts Europe]
46. *Cuphocera* HYM. Tenthredinidae sp. (Eritrea)
LEP. Noctuidae (*Cuphocera javana* frequent on *Spodoptera exempta* Walker)
47. *Cylindromyia* HEM. Pentatomidae (*Bathycoelia thalassina* Herrich-Schaeffer)
48. *Cyrtocladia* [Unknown]
49. *Cyrtophleba* No records TSA (LEP. Noctuidae in Europe)
50. *Dejeania* LEP. Noctuidae (*Heliothis armigera* Hübner)
51. *Descampsina* LEP. Noctuidae (*Sesamia* spp. incl. *poephaga* Tams & Bowden)
52. *Dexia* No records TSA (COL. Scarabaeidae in Europe)
53. *Dexiomera* [Unknown]
54. *Diaprochaeta* [Unknown]
55. *Dinera* No records TSA (COL. Carabidae and Lucanidae in Europe)
56. *Dolichocolon* LEP. Cossidae (*Cossus tenebroides* Felder), Noctuidae (*Agrotis segetum* Denis & Schiffermüller)
57. *Dolichodexia* [Unknown]
58. *Drino* No records TSA (wide range LEP. families, also HYM. Tenthredinidae, in Europe)
59. *Elfia* No records TSA (LEP., several families, in Europe)
60. *Elpe* LEP. Noctuidae (*Elpe risbeci* on *Anomis flava* Fabricius), Nymphalidae (*Elpe* sp. n. on *Charaxes ansorgei levicki* Poulton)
61. *Eomedina* [Unknown]
62. *Eophyllophila* [Unknown]

63. *Erythrocerca* No records TSA (COL. Scarabaeidae in Japan)
 64. *Ethilla* LEP. Geometridae (*Heterostegane indulana* Guenée)
 65. *Ethylloides* [Unknown]
 66. *Eurysthaea* No records TSA (LEP. Noctuidae and Yponomeutidae in Europe)
 67. *Euthera* No records TSA (HEM. Pentatomidae in Eurasia and North America)
 68. *Eutrixopsis* COL. Scarabaeidae (*Heteroligus meles* Billberg)
 69. *Exorista* LEP. wide range of known hosts in Geometridae, Lasiocampidae, Limacodidae, Noctuidae (incl. *Exorista xanthaspis* on *Heliothis armigera* Hübner and *Spodoptera exempta* Walker), Notodontidae, Nymphalidae, Pieridae, Psychidae, Saturniidae and Sphingidae
 70. *Gaedioxis* HYM. Tenthredinidae (*Athalia* sp.)
 71. *Glaurocara* [Unknown]
 72. *Gonia* ORTH. Tettigoniidae (*Ruspolia differens* Serville, formerly *Homocoryphus nitidulus vicinus* Walker)
 73. *Goniophthalmus* LEP. Noctuidae (*Agrotis segetum* Denis & Schiffermüller)
 74. *Gymnoglossa* LEP. Noctuidae (*Heliothis armigera* Hübner)
 75. *Gymnosoma* [Unknown]
 76. *Gynandromyia* HEM. Pentatomidae (*Agonoscelis pubescens* Thunberg = *versicolor* Fabricius, *Veterna patula* Distant)
 77. *Hemiwinthemia* [Unknown]
 78. *Hermya* [Unknown]
 79. *Hyleorus* HEM. Coreidae (*Anoplocnemis curvipes* Fabricius)
 80. *Hypersara* LEP. Lymantriidae (*Euproctis aethiopica* Snellen and *E. xanthomelaena* Holland)
 81. *Hystricephala* [Unknown]
 82. *Hystricovoria* [Unknown]
 83. *Imitomyia* LEP. Noctuidae (*Heliothis armigera* Hübner, *Xanthodes graellsii* Feisthammel)
 84. *Intrapales* [Unknown]
 85. *Istoglossa* [Unknown]
 86. *Kaiseriola* [Unknown]
 87. *Kinangopana* [Unknown]
 88. *Kiniatiliops* [Unknown]
 89. *Kiniatilla* [Unknown]
 90. *Latiginella* [Unknown]
 91. *Leskia* No records TSA (LEP. Sesiidae in Europe)
 92. *Leucocarcelia* [Unknown]
 93. *Leucostoma* HEM. Lygaeidae (*Spilostethus rivularis* Germar)
 94. *Lindneriola* [Unknown]
 95. *Linnaemya* LEP. mainly Noctuidae (incl. *Chrysodeixis chalcites* Esper, *Diparopsis castanea* Hampson, *Earias biplaga* Walker and *E. insulana* Boisduval, *Heliothis armigera* Hübner, *Mythimna leucosticha* Hampson), also Arctiidae (*Spilosoma lutescens* Walker) and Limacodidae (*Coenobasis amoena* Felder)
 96. *Litophasia* [Unknown]
 97. *Lubutana* [Unknown]
 98. *Lydellina* LEP. wide range incl. Lasiocampidae (*Trabala* sp.), Noctuidae (*Grammodes stolidus* Fabricius), Notodontidae (*Anaphe venata* Butler), Pyralidae (*Tegostoma subditale* Zeller), Saturniidae sp.
 99. *Macquartia* COL. Chrysomelidae (*Monardita cuprea* Baly)
 100. *Marshallomyia* [Unknown]
 101. *Medina* COL. Chrysomelidae (*Buphonella murina* Gerstaecker), Tenebrionidae (*Metalloth denticollis* Gray)
 102. *Mesnilana* [Unknown]
 103. *Metacemyia* ORTH. Acrididae (red locust *Nomadacris septemfasciata* Serville), Eumastacidae (*Plagiotriptus leei* Lee, formerly *Manowia* sp. near *alca* Bolívar)
 104. *Metoposisyrops* LEP. Noctuidae (*Sesamia* sp.)
 105. *Microphthalma* COL. Scarabaeidae (*Heteronychus licas* Klug, *Oryctes boas* Fabricius)
 106. *Mintho* No records TSA (LEP. Pyralidae in Europe)
 107. *Minthodes* No records TSA (LEP. Tineidae in Europe)
 108. *Mycteromyiella* DICT. Mantidae (*Sphodromantis lineola pinguis* La Greca)
 109. *Myxarchiclops* [Unknown]
 110. *Nemoraea* LEP. Arctiidae (*Spilosoma maculosum* Stoll), Noctuidae (incl. *Diparopsis castanea* Hampson, *Spodoptera exempta* Walker)

111. *Nemorilla* LEP. Pyralidae (*Loxostege frustralis* Zeller, *Maruca testulalis* Geyer)
 112. *Nemorilloides* [Unknown]
 113. *Neoplectops* LEP. Noctuidae (*Earias biplaga* Walker), Pyralidae (*Maruca testulalis* Geyer)
 114. *Ocypteromima* [Unknown]
 115. *Ossidingia* LEP. Hesperidae (*Zophopetes dysmephila* Trimen)
 116. *Oxymedoria* [Unknown]
 117. *Pales* LEP. very wide range incl. Lasiocampidae, Lycaenidae, Lymantriidae, Noctuidae (incl. *Heliothis armigera* Hübner, *Spodoptera exempta* Walker), Notodontidae, Psychidae, Saturniidae
 118. *Palexorista* LEP. very wide range incl. Eupterotidae, Geometridae, Lasiocampidae, Limacodidae, Lymantriidae, Noctuidae (incl. *Heliothis armigera* Hübner, *Spodoptera exempta* Walker and *S. littoralis* Boisduval), Notodontidae, Pyralidae, Saturniidae, Sphingidae, Tortricidae
 119. *Palpostoma* No records TSA (COL. Scarabaeidae in Orient and Australia)
 120. *Pandelleia* COL. Curculionidae (*Protoctrophus amplicollis* Fähræus and *P. barbifrons* Fähræus)
 121. *Paraclara* HEM. Coreidae (*Anoplocnemis curvipes* Fabricius)
 122. *Paradrino* LEP. Noctuidae (*Heliothis armigera* Hübner)
 123. *Pararondania* [Unknown]
 124. *Paratachina* LEP. Noctuidae (*Heliothis armigera* Hübner)
 125. *Paratryphera* No records TSA (LEP. various families in Europe)
 126. *Pelashyria* [Unknown]
 127. *Peleteria* No records TSA (LEP. various families in other regions)
 128. *Peribaes* LEP. mainly Noctuidae (incl. *Heliothis armigera* Hübner, *Spodoptera exempta* Walker and *S. littoralis* Boisduval), also Geometridae, Lymantriidae, Pieridae
 129. *Periscepsia* LEP. Noctuidae (*Agrotis segetum* Denis & Schiffermüller, *Spodoptera exempta* Walker and *S. littoralis* Boisduval)
 130. *Peristasisea* [Unknown]
 131. *Pexopsis* COL. Scarabaeidae (Melolonthinae, *Lepidiota mashona* Arrow)
 132. *Phorinia* LEP. Geometridae (*Scopula nigrinotata* Warren), Noctuidae (*Anomis* sp., *Parallelia* sp.)
 133. *Phorocerosoma* No records TSA (ORTH. Acrididae elsewhere, *Locusta migratoria* L. in Madagascar and Mauritius, *Oxya yezoensis* Shiraki in Japan)
 134. *Phryxe* No records TSA (LEP. wide range of families in Holarctic)
 135. *Phytomyptera* No records TSA (LEP. several families of micros in Europe)
 136. *Phytomyptarina* [Unknown]
 137. *Piligena* [Unknown]
 138. *Pimelimyia* LEP. Lasiocampidae (*Bombycomorpha bifascia* Walker, *Gonometa postica* Walker), Saturniidae (*Cirina forda* Westwood)
 139. *Plagiocoma* [Unknown]
 140. *Plagiomima* LEP. Noctuidae (*Heliothis armigera* Hübner and *Heliothis* sp.)
 141. *Platydia* [Unknown]
 142. *Platyschineria* [Unknown]
 143. *Plesina* [Unknown]
 144. *Porphyromus* [Unknown]
 145. *Pretoriomyia* [Unknown]
 146. *Pretoriana* [Unknown]
 147. *Prodegeeria* [Unknown]
 148. *Prolophosia* [Unknown]
 149. *Prosenia* No records TSA (COL. Scarabaeidae in other regions)
 150. *Prosenoides* [Unknown]
 151. *Prosopodopsis* No records TSA (LEP. Pyralidae in Orient)
 152. *Prosopofrontina* [Unknown]
 153. *Prosuccingulum* [Unknown]
 154. *Pseudodinera* [Unknown]
 155. *Pseudogonia* LEP. Noctuidae (*Heliothis armigera* Hübner, *Spodoptera exempta* Walker)
 156. *Pseudominthodes* [Unknown]
 157. *Pseudoperichaeta* LEP. Pyralidae (incl. *Antigastra catalaunalis* Duponchel, *Ghesquiereana hirtusalis* Walker, *Marasmia trapezalis* Guenée, *Maruca testulalis* Geyer, *Syllepte derogata* Fabricius, *Triphassa smaragdina* Ghesquière)
 158. *Ptilocatagonia* LEP. Pieridae (*Mylothris chloris* Fabricius and *M. rhodope* Fabricius)
 159. *Reichardia* [Unknown]

160. *Rioteria* LEP. Noctuidae (*Achaea lienardi* Boisduval, *Godasa sidae* Fabricius)
 161. *Rondaniooestrus* HYM. Apidae (African honey-bee, *Apis mellifera adansonii* Latreille)
 162. *Rossimyops* EMB. Embiidae (*Apterembia* sp. = *Dictyoploca* of published record)
 163. *Sarrorhina* [Unknown]
 164. *Schembria* LEP. Pyralidae (*Eldana saccharina* Walker)
 165. *Schizolinnaea* [Unknown]
 166. *Siphona* LEP. Noctuidae (*Busseola fusca* Fuller). [In Holarctic Tipulidae hosts known in addition to many LEP.]
 167. *Sisyropa* LEP. Noctuidae (incl. *Xanthodes graellsii* Feisthammel and *Anomis* spp.)
 168. *Stomatomyia* LEP. Noctuidae (*Mythimna loreyi* Duponchel), Pyralidae (*Ancylolomia uniformella* Hampson)
 169. *Stomina* No records TSA (LEP. Lymantriidae, *Euproctis* in Israel)
 170. *Sturmia* LEP. Danaidae (incl. *Amauris albimaculata* Butler, *A. niavius* Linnaeus and *A. tartarea* Mabilie), Noctuidae (incl. *Heliothis armigera* Hübner), Nymphalidae (*Junonia octavia* Cramer)
 171. *Sturmiopsis* LEP. Noctuidae (incl. *Busseola fusca* Fuller, *Sesamia calamistis* Hampson and *S. nonagrioides* Lefebvre), Pyralidae (*Acigona ignefusalis* Hampson, *Chilo partellus* Swinhoe, *Eldana saccharina* Walker)
 172. *Subfischeria* [Unknown]
 173. *Sumpigaster* [Unknown]
 174. *Thecocarcelia* LEP. Mainly Hesperidae (incl. *Abantis paradisea* Butler, *Artitropa erinnyes* Trimen, *Gomalia elma* Trimen, *Metisella metis* Linnaeus, *Moliena fiara* Butler, *Pelopidas mathias* Fabricius, *Spialia spio* Linnaeus, *Zophopetes dysmephila* Trimen), also Nymphalidae (*Acraea* sp.), Sphingidae (*Agrius convolvuli* Linnaeus) and Noctuid sp.
 175. *Thelaira* LEP. Arctiidae (*Spilosoma maculosum* Stoll), Noctuidae (*Spodoptera litura* Fabricius)
 176. *Thelairodrino* LEP. Lymantriidae (*Euproctis producta* Walker), Notodontidae (*Anaphe panda* Boisduval and *A. venata* Butler)
 177. *Thelairosoma* LEP. Nymphalidae (*Acraea bonasia* Fabricius), Pyralidae (*Syllepte* sp.), Sphingidae (*Hippotion celerio* Linnaeus)
 178. *Thelyconychia* [Unknown]
 179. *Therobia* No records TSA (ORTH. Tettigoniidae in Europe)
 180. *Timavia* No records TSA (LEP. several families in Europe)
 181. *Tipulidomima* [Unknown]
 182. *Trichactia* [Unknown]
 183. *Trigonospila* LEP. Lycaenidae (*Cacyreus palemon* Cramer)
 184. *Trixoclea* [Unknown]
 185. *Voria* LEP. Noctuidae (*Phytometra* sp., *Trichoplusia orichalcea* Fabricius)
 186. *Winthemia* LEP. wide range of Arctiidae, Lymantriidae, Noctuidae, Notodontidae, Saturniidae and Sphingidae
 187. *Zelindopsis* [Unknown]
 188. *Zygobothria* LEP. mainly Sphingidae (incl. *Acherontia atropos* Linnaeus, *Agrius convolvuli* Linnaeus, *Daphnis nerii* Linnaeus, *Hippotion celerio* Linnaeus), also Noctuidae (*Heliothis armigera* Hübner), Papilionidae (*Papilio demodocus* Esper) and Saturniidae sp.

Alphabetical cross-reference list of host orders and families:

- COLEOPTERA: Cerambycidae, 14; Chrysomelidae, 2, 39, 99, 101; Curculionidae, 120; Scarabaeidae, 14, 68, 105, 131.
 DICTYOPTERA: Mantidae, 108.
 EMBIOPTERA: Embiidae, 162.
 HEMIPTERA: Coreidae, 5, 78, 121; Lygaeidae, 5, 10, 93; Pentatomidae, 5, 18, 47, 75; Pyrrhocoridae, 5, 18, 19.
 HYMENOPTERA: Apidae, 161; Tenthredinidae, 45, 69; Vespidae, 7.
 LEPIDOPTERA: Arctiidae, 27, 95, 110, 175, 186; Cossidae, 56; Danaidae, 170; Gelechiidae, 1; Geometridae, 3, 36, 45, 64, 69, 128, 132; Hesperidae, 115, 174; Lasiocampidae, 69, 98, 117, 138; Limacodidae, 27, 35, 69, 95; Lycaenidae, 9, 24, 117, 183; Lymantriidae, 27, 32, 79, 117, 128, 176, 186; Noctuidae, 2, 15, 21, 27, 32, 38, 40, 46, 50, 56, 60, 69, 72, 82, 95, 98, 104, 110, 113, 117, 122, 124, 128, 129, 132, 140, 155, 160, 166, 167, 168, 170, 171, 174, 175, 185, 186, 188; Notodontidae, 27, 45, 69, 98, 117, 176, 186; Nymphalidae, 27, 60, 69, 170, 174, 177; Papilionidae, 27, 188; Pieridae, 45, 69, 128, 158; Plutellidae, 23; Psychidae, 38, 69, 117; Pyralidae, 1, 12, 23, 98, 111,

113, 118, 157, 168, 171, 177; Saturniidae, 27, 32, 45, 69, 98, 117, 118, 138, 186, 188; Sphingidae, 15, 27, 32, 69, 118, 174, 177, 186, 188; Tortricidae, 1, 118; Yponomeutidae, 23.
 ORTHOPTERA: Acrididae, 30, 103; Eumastacidae, 103; Tettigoniidae, 71.

ACKNOWLEDGEMENTS

To prepare the keys it was in some instances necessary to borrow the types of some taxa not represented in the British Museum (Natural History), and for their kindness in lending me type-specimens from their various institutions I am most grateful to the following: Dr E. de Coninck (Musée Royal de l'Afrique Centrale, Tervuren); Dr R. Danielsson (Zoological Museum, Lund); Dr P. Grootaert (Institut Royal des Sciences Naturelles de Belgique, Brussels); Dr B. Herting (Staatliches Museum für Naturkunde, Ludwigsburg); Dr P. I. Persson (Naturhistoriska Riksmuseet, Stockholm); Dr W. Tobias (Forschungsinstitut Senckenberg, Frankfurt); Dr D. M. Wood (Biosystematics Research Institute, Ottawa). My appreciation goes also to Dr Ulrike Aspöck for her time spent unsuccessfully in searching for certain types that should be present in the Brauer and Bergenstamm collection (Naturhistorisches Museum, Vienna) but could not be located. Professor J. Kugler kindly loaned me a specimen of the little-known genus *Oblitoneura* Mesnil from the collection at Tel Aviv needed for comparison with the new genus herein described.

Dr Benno Herting gave me the benefit of his opinion on several tricky taxonomic points that arose during the course of the work, and Dr Keith Harris (dipterist at the Commonwealth Institute of Entomology, London) kindly tested specimens for me against the master key to tribes; to both these colleagues I record my special thanks. Dr E. S. Ross, specialist in Embioptera at the California Academy of Sciences, kindly clarified the generic nomenclature for the embiopteran host of *Rossimylops* from South Africa.

My colleagues in the Coleoptera, Hemiptera and Lepidoptera sections of the Department of Entomology, BMNH, assisted me in checking the nomenclature and taxonomic position of the tachinid hosts mentioned in this work and I record my appreciation of this.

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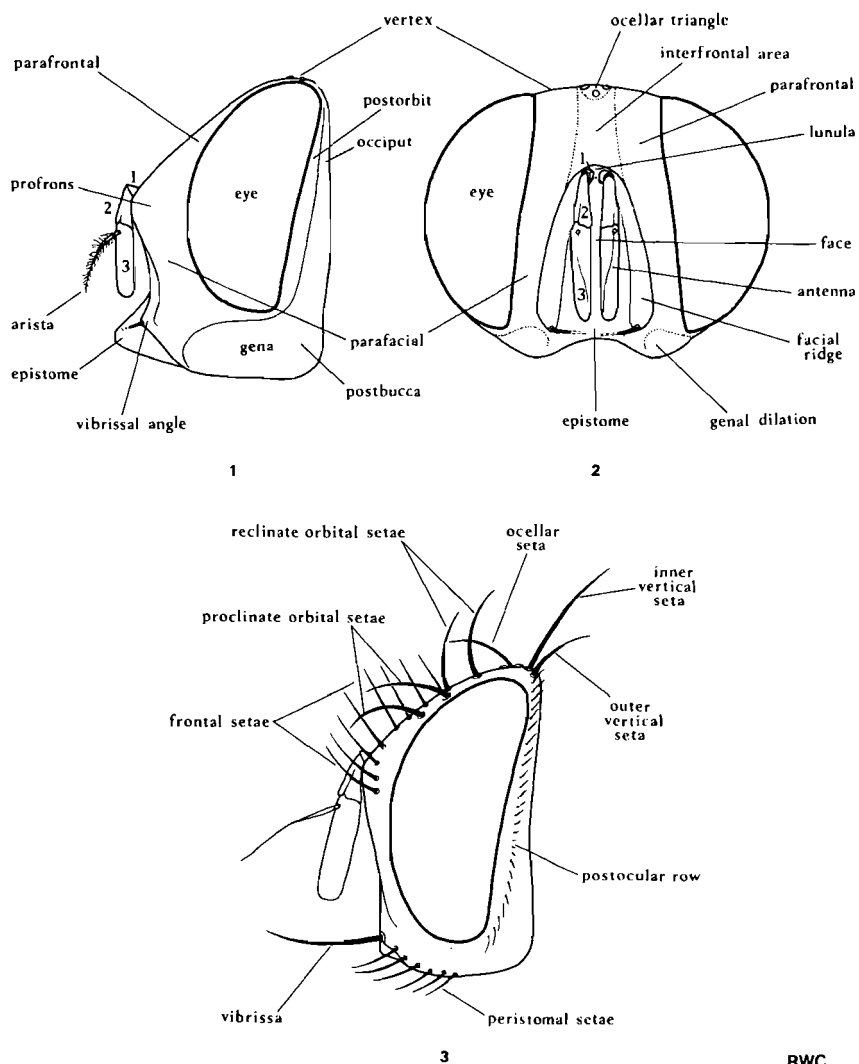
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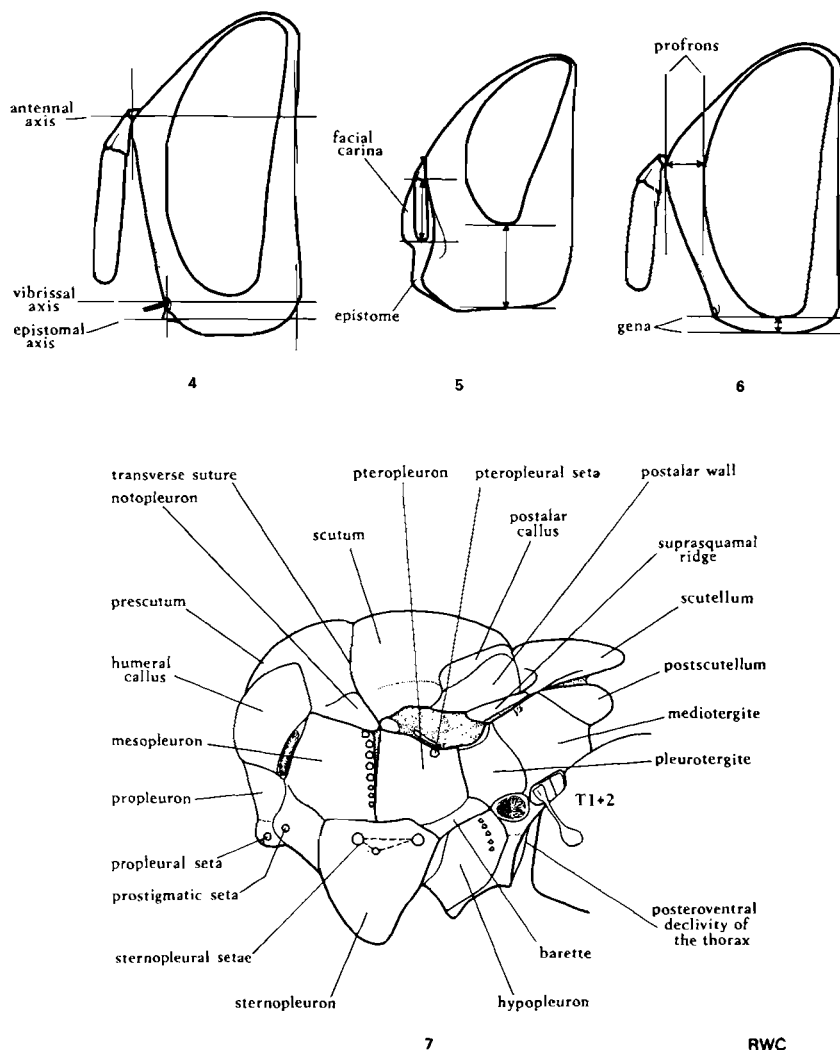
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FIGURES

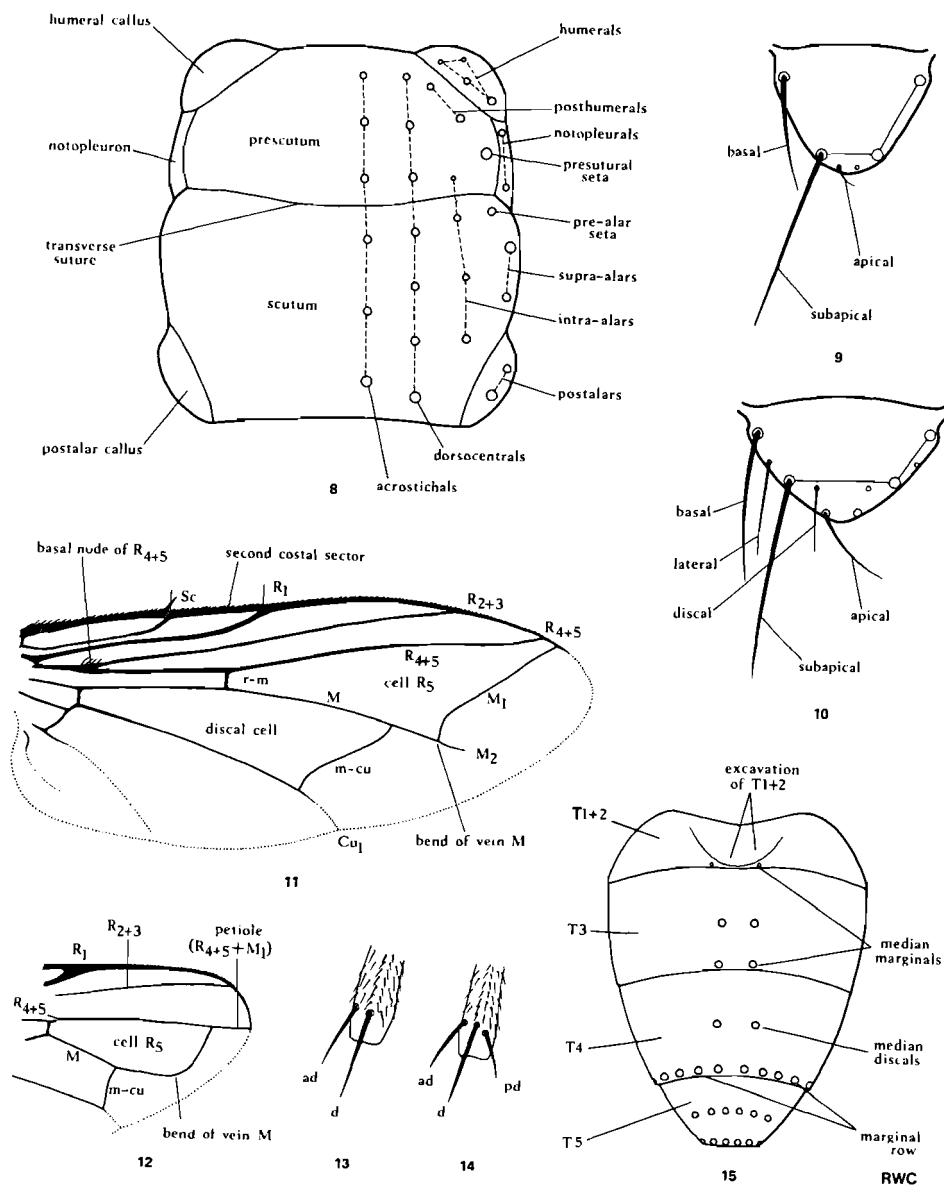


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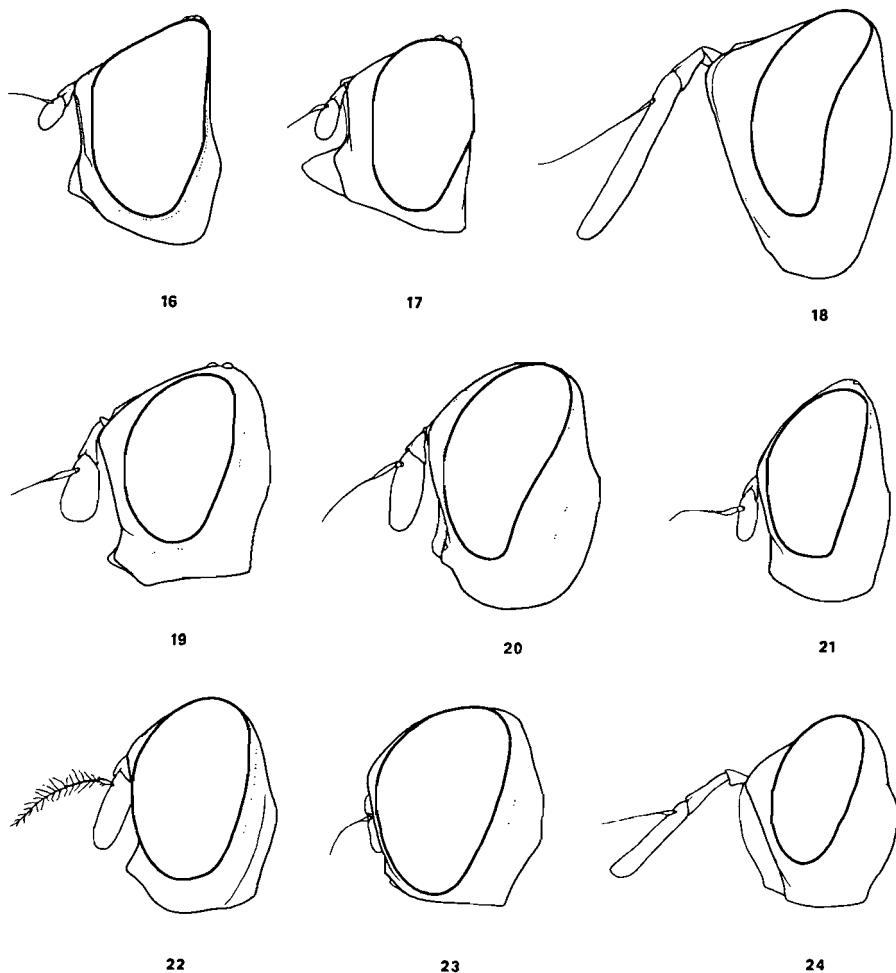
Figs 1-3. Terminology of tachinid head and main setae. 1. Left lateral view to show structure. 2. Facial view to show structure. 3. Left lateral view to show setae.



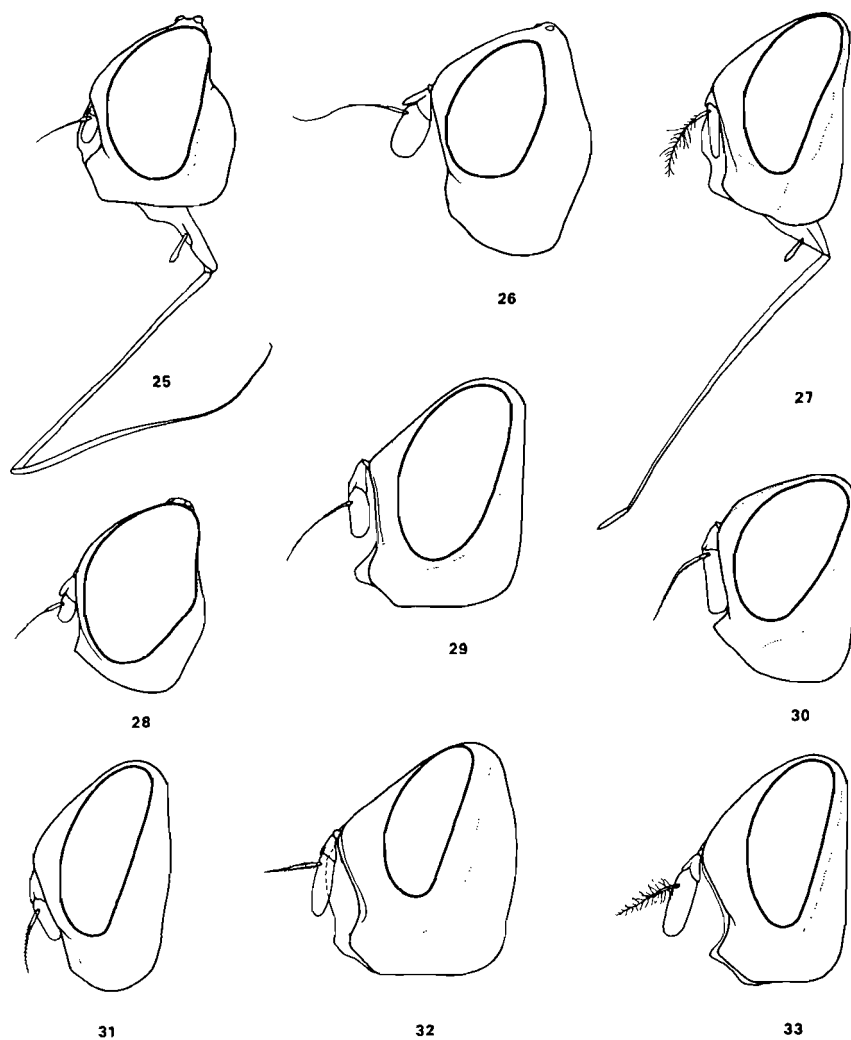
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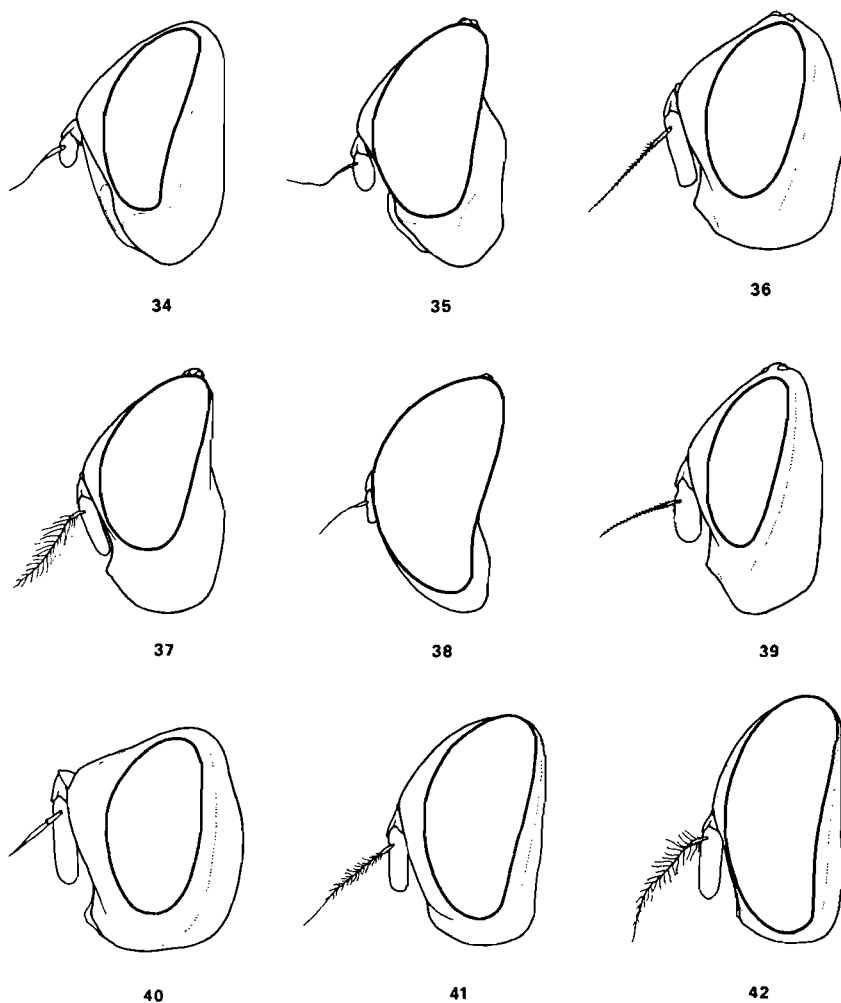
Figs 8-15. Terminology of some thoracic, appendage and abdominal features cited in keys. 8. Dorsal thoracic chaetotaxy (indicated schematically by pore positions of one side only). 9-10. Scutellar setae (two typical shapes of scutellum with fine lines connecting basal and subapical pores indicating important differences in proportions). 11. Wing venation of typical tachinid in which cell R_5 is open to wing edge. 12. Apical part of wing venation in a tachinid with closed cell R_5 and 'petiole' present in wing venation. 13-14. Dorsal view of apex of hind tibia in tachinids with (14) and without (13) posterodorsal preapical setae (pd). 15. Dorsal view of abdomen to show terminology of tergites (T) and main setae (indicated by pore positions).



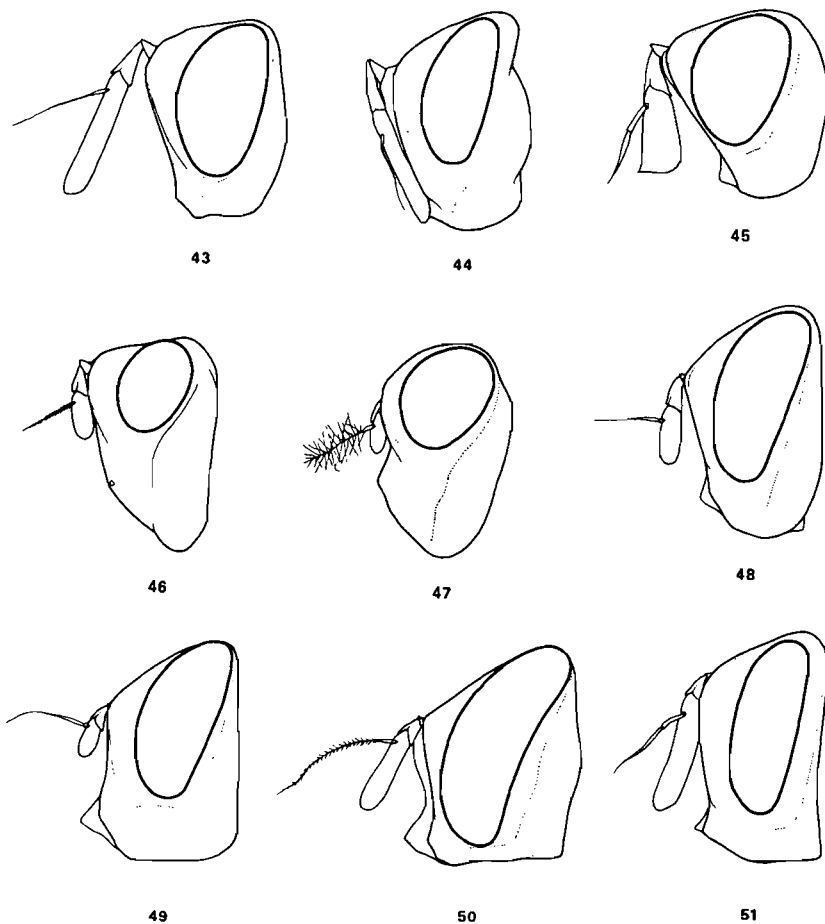
Figs 16—24. Head shapes in some Phasiinae of tropical and southern Africa. 16. *Alophora* (*Alophorella*) *nasalis* Bezzi [♂]. 17. *Alophora* (*Mormonomyia*) *nigrofimbriata* Villeneuve [♂]. 18. *Paraclara* *magnifica* Bezzi [♀]. 19. *Besseria* *oblita* Herting [♂]. 20. *Catapariprosopa* *edwardsi* Emden [♀]. 21. *Clairvillia* *breviforceps* Emden [♀]. 22. *Cahenia* *connexa* Verbeke [♂]. 23. *Catharosia* *alutacea* Emden [♀]. 24. *Euthera* *tuckeri* Bezzi [♀].



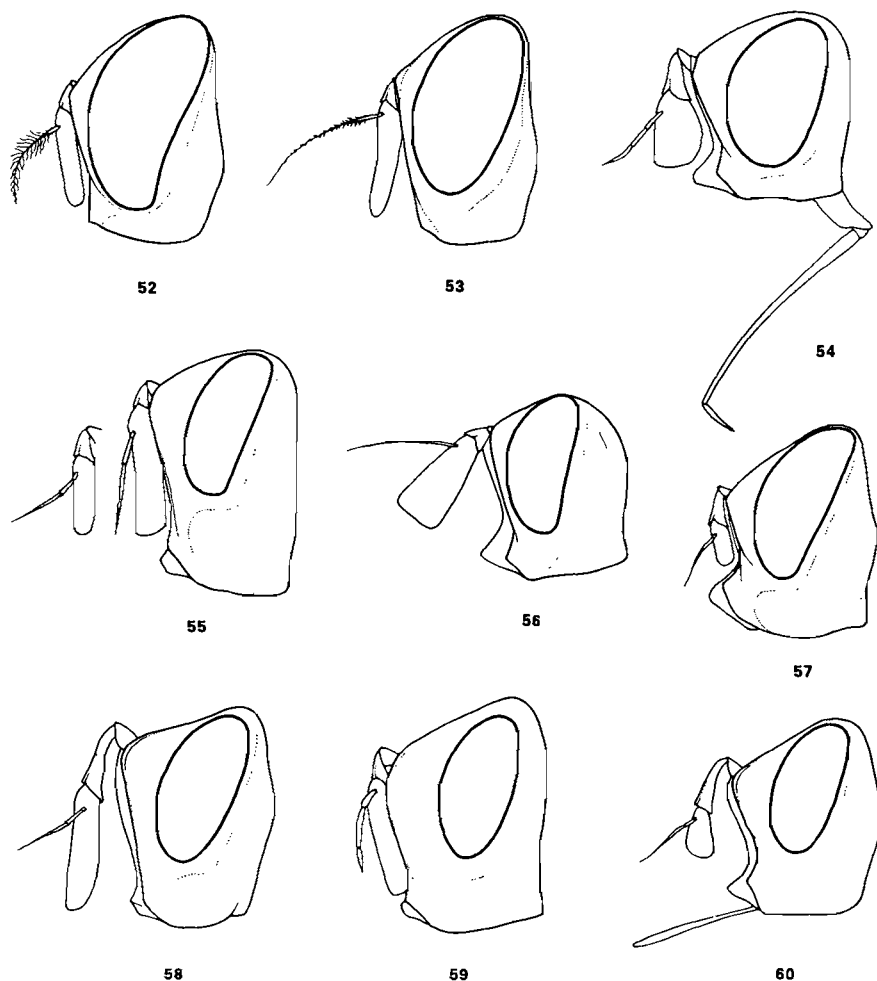
Figs 25-33. Head shapes in some Dufouriinae and Dexiinae of tropical and southern Africa. 25. *Imitomyia mochii* Bezzi [♀]. 26. *Pandelleia dimorphia* Curran [♀]. 27. *Prosenia siberita* Fabricius [♂]. 28. *Plesina africana* Kugler [♂]. 29. *Rossimyiaops whiteheadi* Mesnil [♀]. 30. *Mesnilana bevisi* Emden [♀]. 31. *Platydexia maynei* Emden [♂]. 32. *Billaea gigantea* Wiedemann (species of *Billaea* with facial carina) [♀]. 33. *Billaea vanemdeni* Fennah (species of *Billaea* without facial carina) [♀].



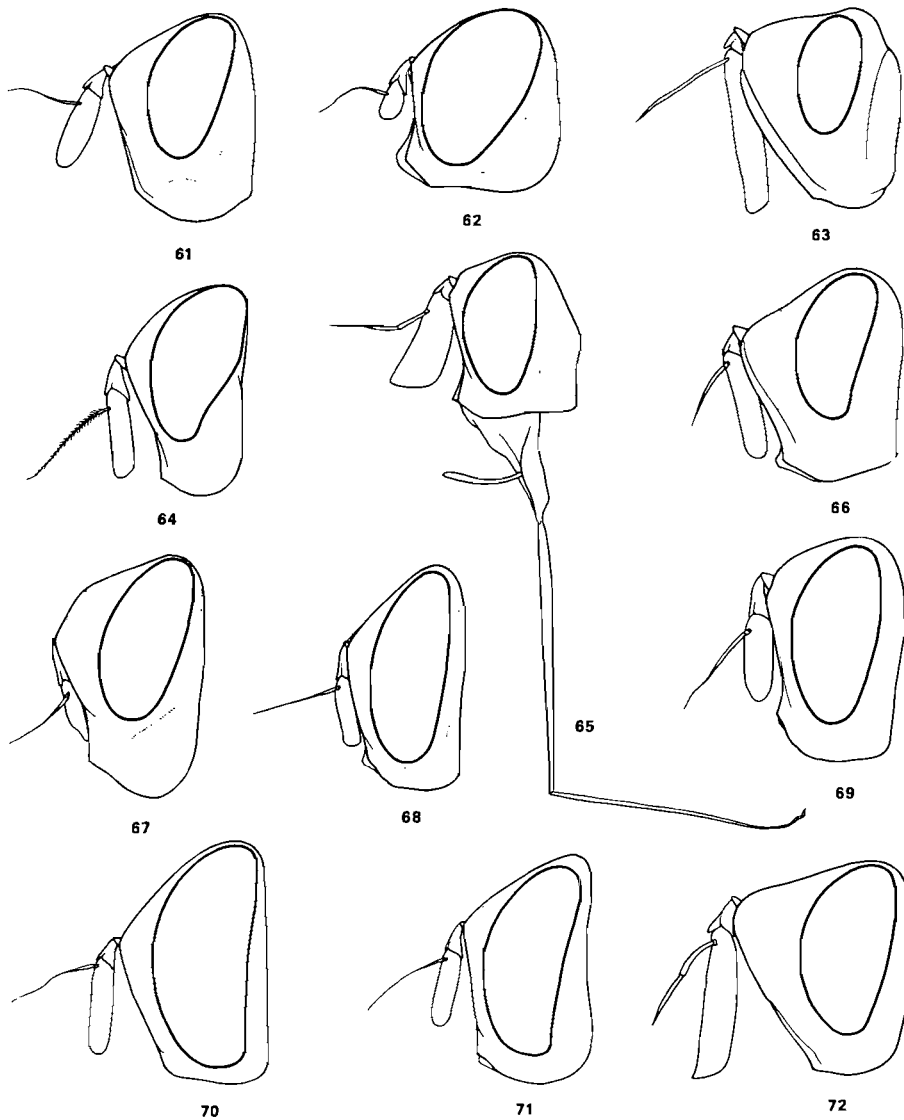
Figs 34-42. Head shapes in some Tachininae of tropical and southern Africa. 34. *Rondaniooestrus apivorus* Villeneuve [♂]. 35. *Eutrixopsis pallida* Villeneuve [♂]. 36. *Palpostoma pallens* Curran [♀]. 37. *Peristasisea luteola* Villeneuve [♂]. 38. *Aulacephala maculithorax* Macquart [♂, for different head profile of ♀ see Fig. 136]. 39. *Glaurocara flava* Thomson [♀]. 40. *Plagiomima rufolateralis* Crosskey sp. n. [♂]. 41. *Thelaira aurofasciata* Emden [♂]. 42. *Allothelaira diaphana* Villeneuve [♂].



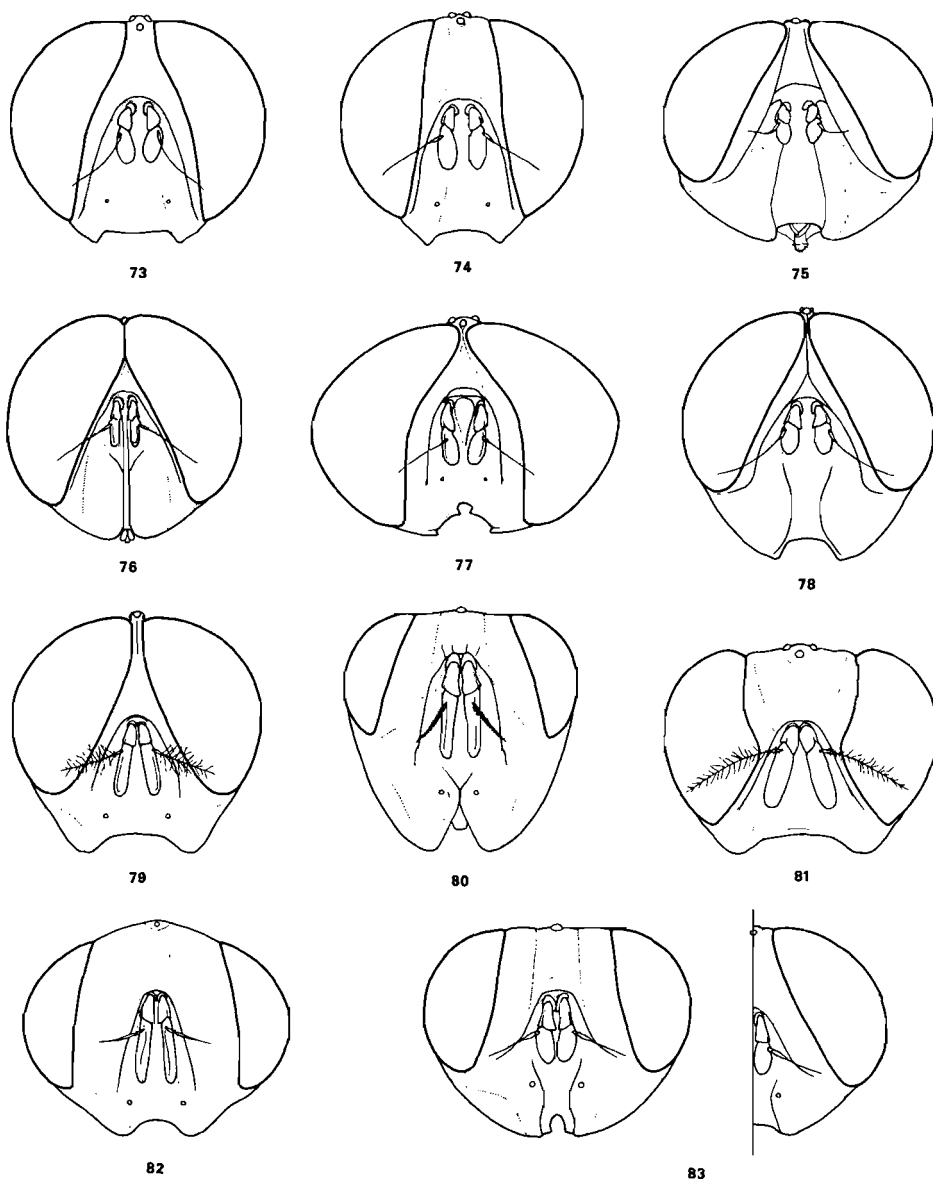
Figs 43–51. Head shapes in some Tachininae of tropical and southern Africa. 43. *Porphyromus caeruleiventris* Emden [♀]. 44. *Chyluella cribrata* Emden [♀]. 45. *Trichactia* sp. n. [♀]. 46. *Cyrtocladia unisetosa* Emden [♀]. 47. *Amesiomima fulvella* Mesnil [♀]. 48. *Cololeskia pallida* Villeneuve [♂]. 49. *Stomina* sp. n. [♂]. 50. *Oxymedoria palpata* Villeneuve [♀]. 51. *Istoglossa aurantiaca* Mesnil [♂].



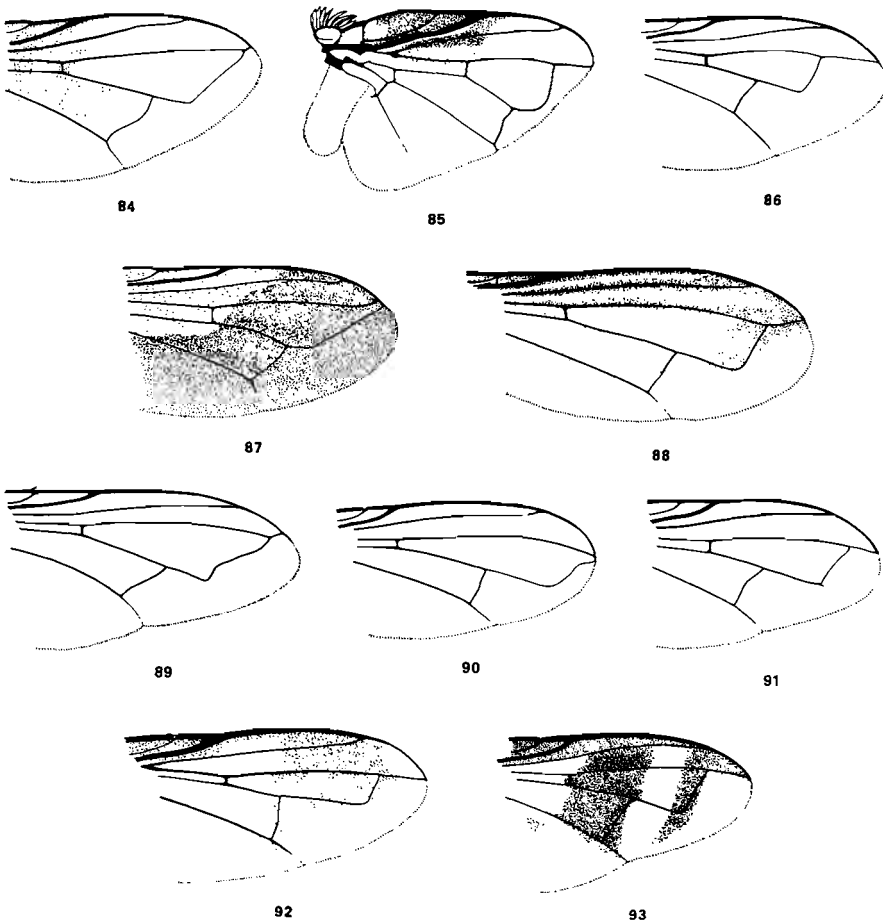
Figs 52–60. Head shapes in some Tachininae of tropical and southern Africa. 52. *Kinangopana edwardsi* Emden [♀]. 53. *Pseudominthodes scutellaris* Townsend [♀]. 54. *Marshallomyia natalensis* Emden [♀]. 55. *Bracheliopsis geniseta* Emden [♂, with antenna of ♀ at approximately same scale]. 56. *Schizolinnaea mirabilis* Emden [♀]. 57. *Brachelia leocrates* Walker [♂]. 58. *Chromatophania picta* Wiedemann [♂]. 59. *Platyschineria cuthbertsoni* Villeneuve [♂]. 60. *Dejeania bombylans* Fabricius [♀].



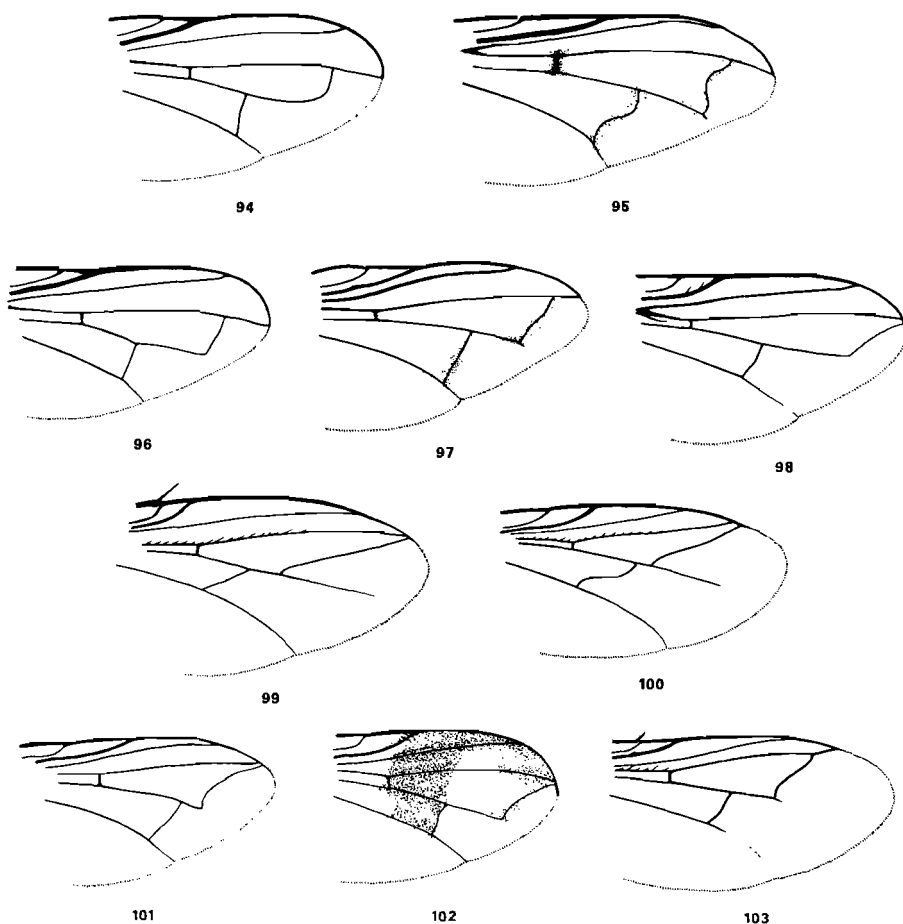
Figs 61-72. Head shapes in some Goniinae of tropical and southern Africa. 61. *Pelashyria grisescens* Villeneuve [δ]. 62. *Pararondania multipunctata* Villeneuve [η]. 63. *Latiginella rufogrisea* Villeneuve [δ]. 64. *Prosuccingulum aberrans* Mesnil [η]. 65. *Siphona murina* Mesnil [δ]. 66. *Pretoriana setosa* Curran [δ]. 67. *Hystricephala nigra* Macquart [δ]. 68. *Cestonia* sp. (Namibia) [η]. 69. *Cestonionerva petiolata* Villeneuve [η]. 70. *Carcelia* (*Senometopia*) sp. [δ]. 71. *Palexorista* sp. [δ]. 72. *Metoposisyrops sesamiae* Mesnil [δ].



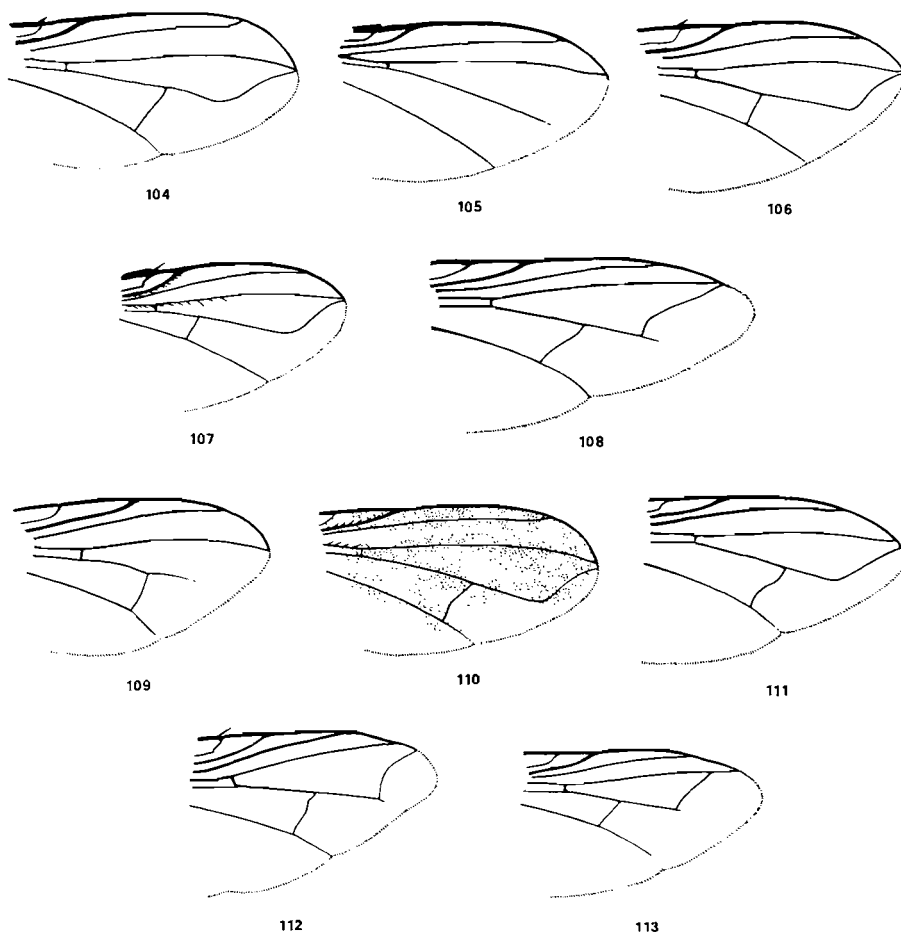
Figs 73-83. Head shape in facial view of some Tachinidae of tropical and southern Africa (outlines only, vestiture omitted). 73-74. *Bogosiella pomeroyi* Villeneuve [73 the ♂, 74 the ♀]. 75. *Rondaniooestrus apivorus* Villeneuve [♂]. 76. *Aulacephala maculithorax* Macquart [♂]. 77. *Alophora (Mormonomyia) nigrofimbriata* Villeneuve [♂]. 78. *Eutrixopsis pallida* Villeneuve [♂]. 79. *Peristasisea luteola* Villeneuve [♂]. 80. *Cyrtocladia unisetosa* Emden [♂]. 81. *Cahenia connexa* Verbeke [♂]. 82. *Goniophthalmus halli* Mesnil [♀]. 83. *Trioxoclea metallica* Villeneuve [♀ on left, ♂ as half-head only on right].



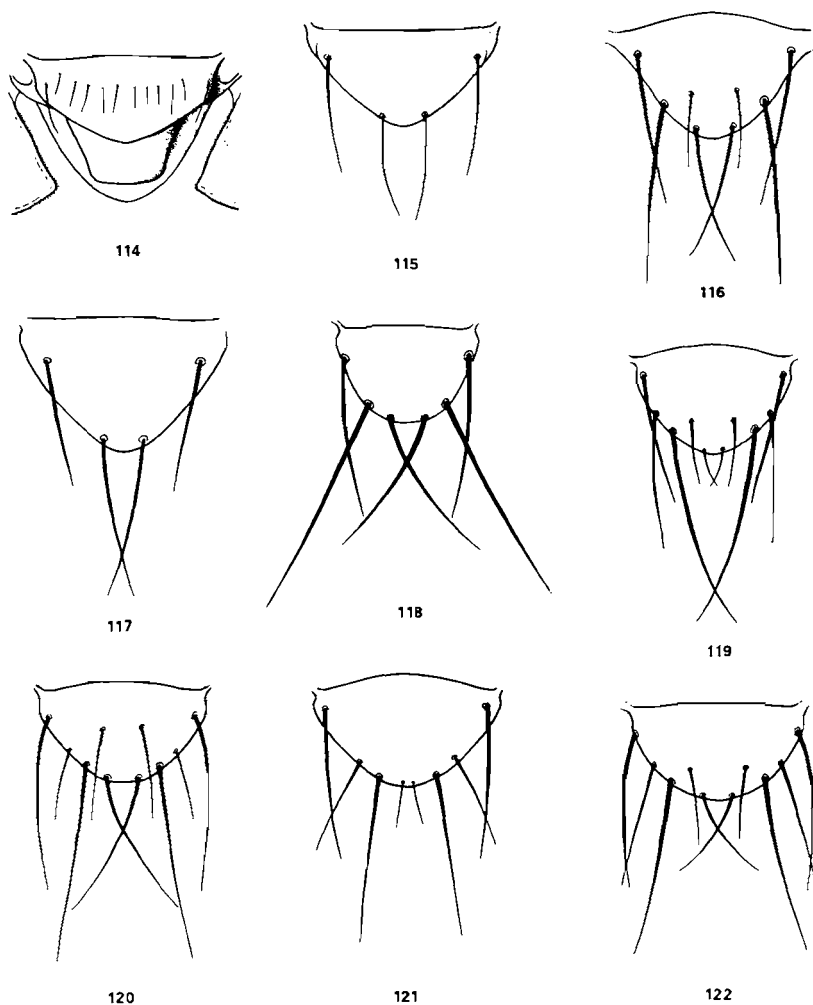
Figs 84–93. Wing venation of some Phasiinae of tropical and southern Africa (wing base omitted except in Fig. 85). 84. *Gymnosoma emdeni* Mesnil. 85. *Alophora* (*Mormonomyia*) *nigrofimbriata* Villeneuve ♂ (see note at end of legend). 86. *Besseria* sp. n. [Nigeria]. 87. *Paraclara magnifica* Bezzi. 88. *Prolophosia petiolata* Townsend. 89. *Cylindromyia* sp. 90. *Cahenia mima* Verbeke. 91. *Leucostoma* sp. 92. *Catharosia alutacea* Emden. 93. *Euthera tuckeri* Bezzi. (Note: wing shape is sexually dimorphic in *Alophora* (*Mormonomyia*) and the extent of dark colour in ♂ intraspecifically variable; Fig. 85 shows a typical ♂ wing (specimen from Nigeria) and indicates the characteristic lanceolate scales at the wing base in this sex.)



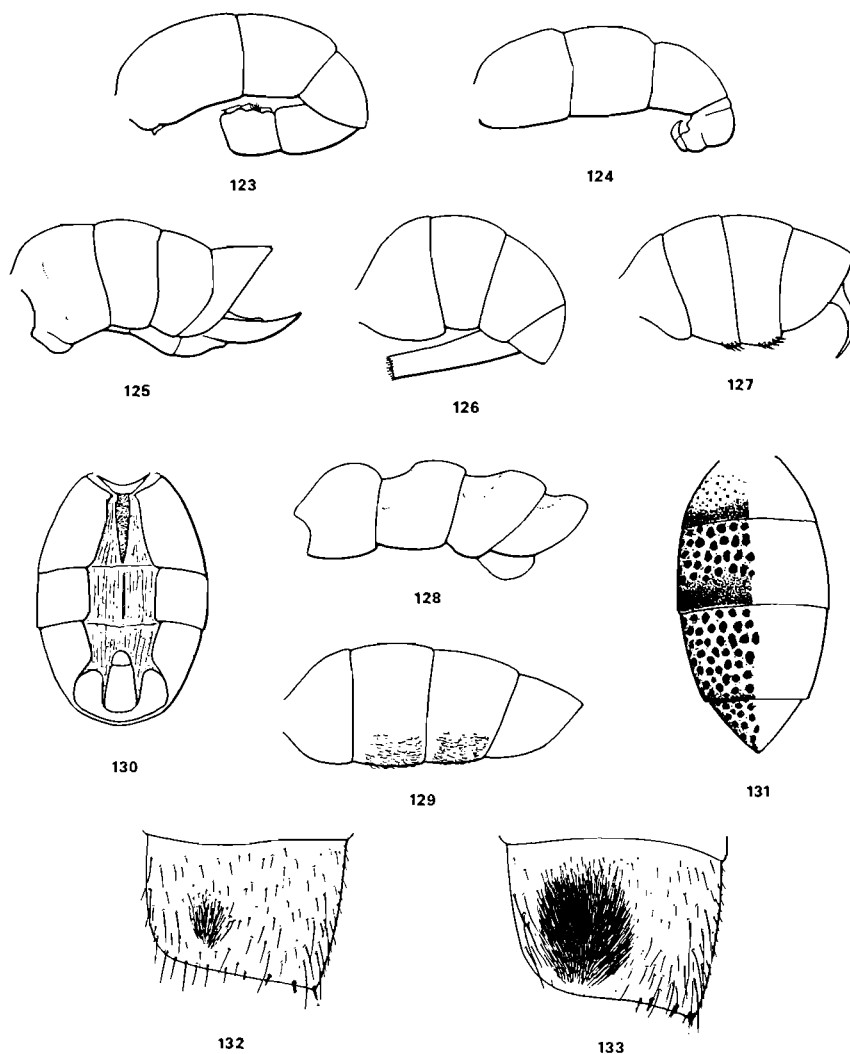
Figs 94–103. Wing venation of some Dufouriinae and Tachininae of tropical and southern Africa (wing base omitted). 94. *Pandelleia dimorphia* Curran. 95. *Aulacephala maculithorax* Macquart. 96. *Imitomyia mochii* Bezzi. 97. *Rondaniooestrus apivorus* Villeneuve. 98. *Elpe* ? sp. n. [Tanzania]. 99. *Hyleorus fasciatus* Curran. 100. *Plagiomima rufolateralis* Crosskey sp. n. 101. *Bracheliopsis geniseta* Emden. 102. *Schizolinnaea mirabilis* Emden. 103. *Marshallomyia natalensis* Emden.



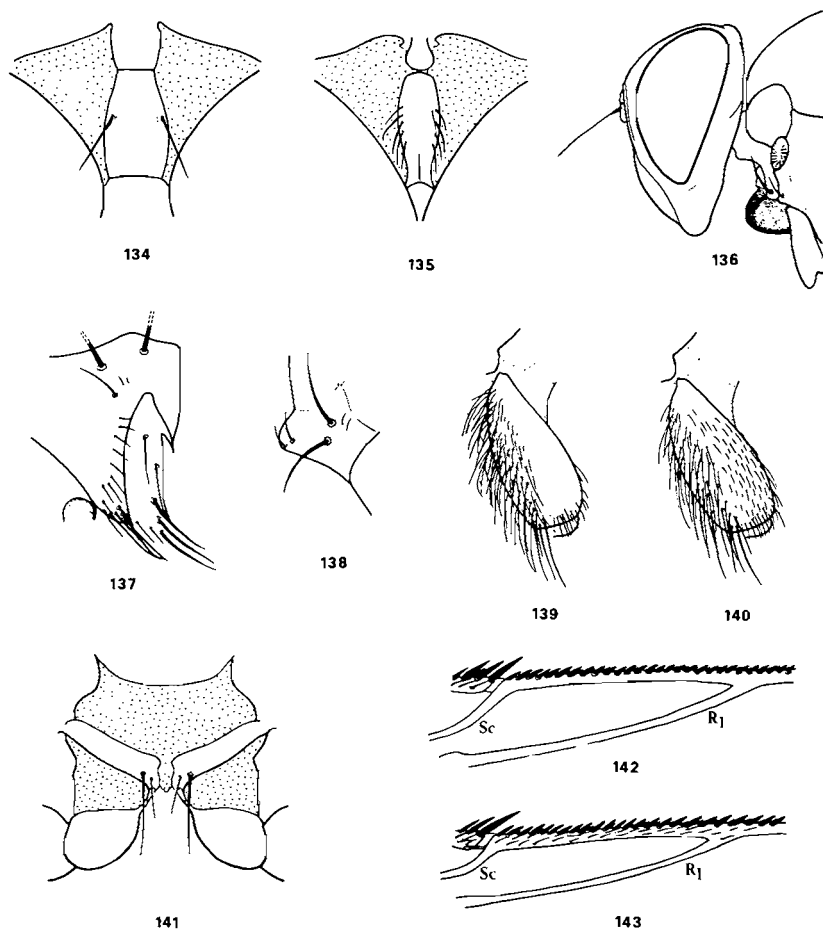
Figs 104–113. Wing venation of some Goniinae of tropical and southern Africa (wing base omitted). 104. *Metacemyia setosa* Crosskey. 105. *Phytomyptera* sp. 106. *Neoplectops nudinerva* Mesnil. 107. *Peribaea orbata* Wiedemann. 108. *Exorista* sp. 109. *Latiginella rufogrisea* Villeneuve. 110. *Kiniatilla tricincta* Villeneuve. 111. *Compsilura concinnata* Meigen. 112. *Descampsina sesamiae* Mesnil. 113. *Cestonia* ? sp. n. [South Africa].



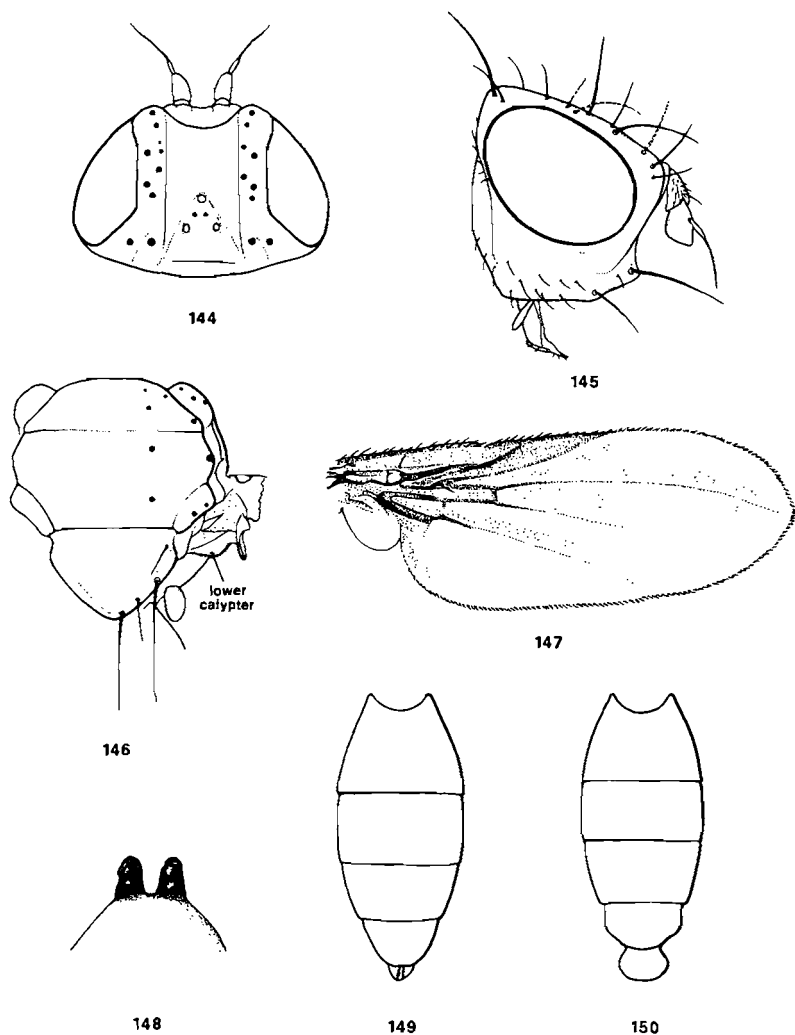
Figs 114-122. Arrangements of scutellar setae in some Tachinidae of tropical and southern Africa. 114. *Alophora (Mormonomyia) nigrofimbriata* Villeneuve (showing also the platform-like postscutellum extensively visible from above behind the scutellum and the inner margins of the lower calyptres). 115. *Alophora (Alophorella) nasalis* Bezzi. 116. Arrangement in typical Dexiinae (three pairs of marginals, no laterals but discals present). 117. *Palpostoma* sp. 118. Arrangement in Acemyini, drawn from *Ceracia* (three pairs of very strong marginals, no laterals or discals). 119. Arrangement in Siphonini (subapical setae convergent and usually crossing, enclosing small apicals). 120. *Bracheliopsis geniseta* Emden. 121. *Glaurocara flava* Thomson. 122. Arrangement typical of *Carcelia* and *Winthemia* in which distance between bases of subapical setae is much greater than that between a subapical seta and its corresponding basal seta (see also Fig. 10).



Figs 123–133. Some distinctive abdominal features in Tachinidae of tropical and southern Africa. 123–129. Abdominal profiles of: 123. *Catapariprosopa edwardsi* Emden ♂. 124. *Besseria oblita* Herting ♂. 125. *Alophora (Alophorella) nasalis* Bezzi ♀. 126. *Pandelleia dimorphia* Curran ♀. 127. *Compsilura concinnata* Meigen ♀. 128. *Plesina africana* Kugler ♂. 129. '*Nealsomyia*' *lindneri* Mesnil ♂, showing patches of short soft fine close-set hair on venter of T3 and T4. 130. Ventral view of abdomen in ♂ of *Besseria oblita* Herting. 131. Dorsal view of abdomen in ♀ of *Chyuluella cribrata* Emden showing unique pattern of large dark dots separated by pale pollinose areas (holotype ♀ known, ♂ pattern possibly different). 132–133. Examples of large and small hair-fascicles on venter of abdominal T4 in males of *Pallexorista* spp.



Figs 134–143. Some features of the thorax and thoracic appendages aiding the identification of Tachinidae. 134–135. Ventral view of prosternum showing examples of this structure when 'setulose' instead of bare, drawn from *Palpostoma* sp. (Fig. 134) and *Oxymedoria palpata* (Fig. 135). 136. Profile of head and anterior part of thorax showing inflated prosternum occurring in Ormiini, drawn from *Aulacephala maculithorax* ♀. 137. Showing row of precoxal hairs on sternopleuron in genus *Actia*. 138. Showing characteristic downward curvature of lower prostigmatic seta in genus *Peribaea*. 139–140. Anterior surface of fore coxa, showing (Fig. 139) extensively bare inner area typical of most Tachinidae, and (Fig. 140) the surface mainly covered on inner part with short fine recumbent hair as (for example) in most Voriini, Nemoraeni, Microphthalmini and *Thelaira* (both figures slightly schematic). 141. Showing long fine setae (sometimes duplicated as in figure) on posterodorsal edges of hind coxae occurring in a few Afrotropical Goniinae (eg. *Carcelia* (*Caricelia* and *Thelymyiops*) and *Calozenillia*). 142–143. Lower surface of second costal sector of wing, schematic, showing (Fig. 142) the normal bare condition and (Fig. 143) the finely haired condition occurring in many forms in different parts of the Tachinidae.



Figs 144–150. *Apomorphomyia lygaeidophaga* Crosskey gen. n., sp. n. 144. Dorsal view of head (♂ and ♀) with positions of setae indicated by black dots. 145. Right lateral view of head of ♀ paratype. 146. Dorsum of thorax and wing base, showing exceptionally small lower calypter and setae indicated for one side only (positions as black dots except where drawn on scutellum). 147. Wing, with the close covering of strong microtrichia not drawn. 148. Posterior spiracles of puparium. 149–150. Dorsal view of adult abdominal shape, 149 the female and 150 the male.

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